C.I.
HC 4456

Page 11 –
" 70 –

CITY OF LEICESTER
EDUCATION COMMITTEE

ANNUAL REPORT

OF THE MEDICAL OFFICER
ALLAN WARNER, M.D., D.P.H.

FOR THE YEAR ENDED
31st. DECEMBER, 1932.

F. P. ARMITAGE, M.A.,
Director of Education

HYGIENE & TROPICAL DISEASES
20 SEP 1933
44

CITY OF LEICESTER
EDUCATION COMMITTEE

ANNUAL REPORT

OF THE MEDICAL OFFICER
ALLAN WARNER, M.D., D.P.H.

FOR THE YEAR ENDED
31st. DECEMBER, 1932.

BUREAU OF HYGIENE & TROPICAL DISEASES
20 SEP 1933

F. P. ARMITAGE, M.A.,
Director of Education.

Digitized by the Internet Archive
in 2017 with funding from
Wellcome Library

https://archive.org/details/b29725604

CITY OF LEICESTER EDUCATION COMMITTEE, 1931-1932.

MEMBERS OF THE COUNCIL.

*Ald. Sir Jonathan North, D.L., J.P., *Chairman.*

*Mr. R. Hallam, *Vice-Chairman.*

*The Lord Mayor (Ald. W. E. Wilford, J.P.).
*Mr. S. N. Adams.
Ald. H. Carver, J.P.
Mr. F. Chappin.
*Mr. J. Eastwood.
*Miss E. C. Fortey, B.Sc., J.P.
Miss E. R. Frisby, J.P.
Ald. E. Grimsley.
*Ald. W. E. Hincks, O.B.E., J.P.
Mr. G. Holyoak.
Ald. J. M. Hubbard, J.P.
Mr. C. E. Keene.
*Mr. C. R. Keene.
Mr. C. A. Newport.
*Mr. W. H. Smith.
Mrs. E. Swainston.
Mr. S. Taylor, J.P.
*Mr. F. W. Tookey.
Mr. J. M. Walker.
Mrs. I. Warner, J.P.

NOT MEMBERS OF THE COUNCIL.

Rev. Father E. Essex, O.P.
Mr. S. A. Gimson, J.P.
Mr. J. W. Ofield.
*Mr. W. Oram, J.P.
Rev. Canon G. E. Powell.
Mrs. M. E. Rudd.
Mr. S. Scattergood.
*Mr. G. C. Turner, J.P.
*Miss J. L. Wyatt.

*MEMBERS OF THE MEDICAL SERVICE SUB-COMMITTEE.

Chairman: Alderman W. E. Hincks, O.B.E., J.P.
Vice-Chairman: Miss E. C. Fortey, B.Sc., J.P.

CITY OF LEICESTER.

Area of City (in acres)		... 8,582
Population (Estimated 1932)		... 241,300
Number of Schools	(Primary)	... 65
Number of Departments ...	,,	... 112
Average Attendance ...	,,	... 27,359
Average Number on the School Registers	,,	.. 31,597
Number of Schools	(Secondary)	... 9
Number of Pupils on the School Registers	,,	... 4,095

SCHOOL MEDICAL SERVICE STAFF.

School Medical Officer.

A. Warner, M.D., D.P.H.

Senior Assistant School Medical Officer.

T. A. Carson, M.B , B.CH.

Assistant School Medical Officers.

K. McAlpine, M.B., CH.B.
Gladys Randall, M.B., B.S., D.P.H.
J. H. Stritch, M.B , B.CH., D.P.H.

Ophthalmic Surgeons.

C. C. H. Binns, M.A., M.B., B.C.
A. L. McCurry, M.D., D.O.M.S. (*Surgeon to Special Classes for the Blind*).

Orthopædic Surgeon.

L. Morris, M.D., F.R.C.S.

Aural Surgeons.

A. L. Macleod, M.A., M.B., C.M. (*Honorary Consulting Surgeon*).
J. A. Keen, M.B., B.S., F.R.C.S.

Anæsthetist.

E. L. Lilley, M.B., B.S., F.R.C.S.

Dental Surgeons.

F. G. Harvey, B.D.S.
A. J. Sutherland, L.D.S.
N. Howson, L.D.S.
F. S. Pettitt, L.D.S.

Instructress in Remedial Exercises.

M. E. Ison.

Instructress in Speech Exercises.

S. Talbot.

Organisers of Physical Training.

F. W. Briggs.
Jean Bennett.

Resident Staff.

E. M. Cartwright, *Matron.*
E. J. Hunt, *Nurse.*
M. Blakeway, *Ward Maid.*

Nurses.

A. Ahern.
L. G. Ball.
A. Brindley.
M. Burden.
J. G. Carter (*Appointed 24-10-1932*).
H. Clarke.
S. E. Corbett.
M. A. Foden.
M. Grocock.
L. Holmes
H. Martin.
B. Meadows.
E. Richards (*Resigned 18-10-1932*).
B. Smith.

Clerical and Clinic Staff.

Chief Clerk.

Wm. E. Goodwin.

Technical Clerk.

Miss W. M. Goodman.

Staff Clerks.

F. Timson.
G. Wisdish.
Miss A. S Astill.
Miss M. E. Naylor.
Miss E. M. Vick.
Miss M. K. Wallbank.

Assistant School Medical Officers' Clerks.

Miss E. A. Deeming.
Miss E. G. Girling.
Miss F. W. Perkins.
Miss G. R. Taylor.

Dental Attendants.

Miss B. Allibone (*Appointed 31-10-1932*).
Miss M. Folwell (*Resigned 31-5-1932*).
Miss F. A. Otter.
Miss G. Richmond (*Resigned 31-10-1932*)
Miss E. C. Willson (*Appointed 25-5-1932*).
Miss D. Wright.

Clinic and Enquiry Officers.

C. Oldham.
C. E. Haigh.
S. B. Harris.

Clinic Attendant.

H. J. Donne.

Caretakers.

G. P. Hurst.
C. Bostock.

CONTENTS.

PAGE
Administration of Treatment Clinics 44-45
Artificial Sunlight 7, 21-23
Blind, Deaf, Mentally Defective and Epileptic Children ... 47-50, 57-60
Clothing and Footgear 16, 18
Committee 3
Continuation Schools 52
Co-operation of Parents, Teachers, School Attendance Officers and Voluntary Bodies 46-47
Co-ordination 11
Crippling Defects and Orthopædics 7, 16, 34-38
Defects Found by Medical Inspection 6, 15, 55, 65
Dental Defects 6-7, 16, 29-33, 63, 69
Ear Disease and Hearing 7, 16, 24, 25, 47, 57, 61, 67
Employment of Children and Young Persons 6, 52
Enlargement of Thyroid Gland 16
Exceptional Children in the Area 57-60
External Eye Disease 7, 15, 24, 61, 67
Findings of Medical Inspection 6, 15, 54-69
Following-up and Work of School Nurses 6, 17-18, 63
Infectious Disease 17
Malnutrition 18
Medical Inspection 6, 14-16, 20, 51, 54, 64
Medical Treatment 7, 18, 20, 25, 44-45, 51, 61, 67
Milk 46
Minor Ailments 6-7, 15, 19, 20
Miscellaneous 3, 10, 53
Nursery Schools 50
Orthopædic 7, 16, 34-38
Open Air Education 38-40
Parents' Contributions 44-45
Physical Training 41-44
Playing Fields 42
Provision of Meals 46
Radiant Heat 24
Remedial Exercises 34-38
Residential Open Air Schools 39
Sanatorium Treatment 19
School Baths 46
School Buildings 11
School Camps and Sports 39, 41-44
School Furniture 11-13
School Journeys 39
Secondary Schools 3, 51, 64-69
Skin Diseases 6, 7, 15, 19-20, 61, 67
Speech Exercises 48-50
Staff 4, 10
Statistical Tables—Elementary Schools 54-63
Secondary Schools 64-69
Summary of Work 6-7
The School Medical Service in relation to Public Elementary Schools 11
Tonsils and Adenoids 7, 15, 19, 25-29, 62, 68
Tuberculosis 15, 19, 59, 60
Uncleanliness 15, 17, 18, 63
Ultra Violet Light 7, 21-23
Vision 7, 16, 24, 45, 47, 57, 61, 62, 67, 68
X-Ray 7, 23, 24
Appendix A—Training Children in Correct Posture 70-80
Appendix B—The End-Results of the Tonsil and Adenoid Operation in Children 81-87

SUMMARY OF INSPECTION.

INSPECTION.

	For the year 1931.		Total.	For the year 1932.		Total.
MEDICAL OFFICERS.						
Number of *individual children* examined at Elementary and Secondary Schools		25,252			26,254	
Number of *re-inspections* at Schools and Clinics		27,382	52,634		28,535	54,789
DENTISTS.						
Number of *individual children* examined at Elementary Schools (including $\frac{3251 \text{ in } 1931}{3262 \text{ in } 1932}$ from Secondary Schools)		30,742			29,535	
Number of *re-inspections* at Clinics		6,629	37,371		2 213	31,748
NURSES.						
Number of *examinations of children* at Elementary Schools			78,162			86,873
Number of Visits paid—To Schools	*982*	*6,932*		*956*	*5,909*	
To Homes	*5,950*			*4,953*		
TOTAL *number of Inspections* at Schools and Clinics by Medical Officers, Dentists and Nurses			168,167			173,410

DEFECTS FOUND DURING INSPECTION.

	1931 Requiring treatment.	1931 For observation only.	1931 Total	1932 Requiring treatment.	1932 For observation only.	1932 Total
MEDICAL OFFICERS	12,581	4,351		12,558	4,696	
DENTISTS	16,879	—		17,175	—	
TOTAL *number of Defects found during Inspection*			33,811			34,429

INSPECTION CLINICS.

	1931 Children.	1931 Defects.	1931 Attendances.	1932 Children.	1932 Defects.	1932 Attendances.
School Medical Officer's General Diseases Clinic	1,890	1,890	2,973	1,965	1,965	2,904
Richmond House Employment of Children Clinic	713	23	809	726	15	769
Richmond House Minor Ailments Clinic	136	174	303	115	116	201
Chester Street ,, ,,	267	215	1,049	250	345	867
Marriott Road ,, ,,	49	62	312	43	50	159
TOTAL *number of Children and Defects dealt with* and attendances for inspection	3,055	2,364	5,446	3,099	2,491	4,900

SUMMARY OF TREATMENT.

DEFECTS TREATED AT THE CLINICS.	For the year 1931.				For the year 1932.			
		Children.	Defects.	Attendances.		Children.	Defects.	Attendances.
SKIN CLINICS—								
Diseases of the Skin and Minor Ailments		2,366	3,045	35,489	...	2,527	3,174	33,791
X-RAY CLINIC—								
Ringworm		49	49	119	...	32	32	84
OPHTHALMIC CLINIC—								
Vision and External Eye Diseases		1,170	1,589	3,489	...	1,139	1,694	3,566
Number of children supplied with Glasses ...	*1,028*				*999*			
AURAL CLINIC—								
Diseases of the Nose, Ear and Throat		2,145	3,278	6,209	...	1,938	3,020	5,877
Number of Operations performed under an Anæsthetic	*1,311*				*1,296*			
DENTAL CLINICS		8,756*	8,756	12,754	...	8,625*	8,625	12,730
Number of Extractions	*17,964*				*18,491*			
Number of Fillings	*5,140*				*5,080*			
ORTHOPÆDIC CLINIC		697	697	9,521	...	944	944	9,322
Number of Operations performed under an Anæsthetic	*58*				*54*			
ULTRA VIOLET LIGHT		475	475	9,000	...	464	464	8,519
TOTAL *number of Defects treated at the Clinics* and attendances for treatment			17,889	76,581	...		17,953	73,889
Total number of individual children treated during the year (excluding Dental)* *Elementary*	*5,644*	*5,931*			*55,76*	*5,908*		
Secondary	*287*				*332*			

CITY OF LEICESTER EDUCATION COMMITTEE.

REPORT of the School Medical Officer

FOR THE YEAR ENDED 31st DECEMBER, 1932.

To the Chairman and Members of the Education Committee.

Ladies and Gentlemen,

I have the honour of presenting my twenty-fifth Annual Report upon the work of the School Medical Service of the City of Leicester for the Year ended 31st December, 1932.

INTRODUCTION.

The statistics recorded on the previous page give some idea of the scope and amount of work accomplished by the School Medical Service during the year 1932. From the figures on pages 54 and 64 it will be seen that 11,924 children had a complete medical examination and that 14,330 children were examined with regard to some special defect. In addition 5,908 children received medical treatment for various defects and 8,625 children received dental treatment at the School Clinics. This large total of children receiving treatment shows how widely parents have come to rely on the Education Department for the maintenance of the health and fitness of their children. A fitness which often determines whether a child shall take full advantage of the education provided or not. Again, some of the ailments detected on medical inspection are preventable at an early age and cease to be preventable when growth is advanced. If such ailments are neglected in childhood they may lead to inefficiency and permanent defects in adult life. Hence the enormous economic importance of the early treatment of disease-tendencies. Without any technical knowledge, it must be obvious to anyone who can compare present with former times that the general well-being and physical efficiency of the young people of Leicester to-day is infinitely better than it was 25 years ago. There is no doubt that the children leaving the Elementary Schools to-day are a stronger and healthier race than they were before the introduction of school medical inspection. These beneficient changes are doubtless due to many factors, but the great improvement is largely the result of the special attention that has been paid to child welfare in recent years, including medical inspection and treatment.

In addition to children found on medical inspection to be suffering from some remedial defect, there are others who have had a bad start in life, due either to inheritance, disease or home circumstance, which prevents them obtaining proper benefit from instruction in an ordinary school. For many years it has been an important duty of the School Medical Officer to ascertain accurately the number of these exceptional children and after careful examination of the child and its circumstances to determine what provision must be made for its education. Thus we have a number of special schools suitable for a fairly definite type of child, such as schools for the deaf, the blind, physically or mentally defective, etc.

The great advance that has been made in education, during recent years, is largely due to the increasing recognition of the fact that there is nothing in which human beings differ more than in their degree of mental capacity. That a different type of mind requires a different form of training if the individual is to discover his powers and his limitations and recognise the way in which he may achieve the fullest expression of his natural ability. This has led the educationist to treat his students more like the doctor treats his patients, individually. Thus, the tendency to-day is to group the children more according to capacity than to age, and to diminish the size of classes.

During the year under review an extremely important educational step has been taken by establishing a new type of school for nervous children at Haddenham Road, formerly known as St. Mary's Fields School. By the expression "nervous child" is meant one who is lacking in a proper balance of the nervous system rendering him unfit to be trained in an ordinary school. In the Appendix to my Annual Report, 1926, a description was given of the nervous child in detail, in which I showed that many children, not necessarily of inferior intelligence, were hypersensitive and unreliable in their re-actions. They were eccentric in their behaviour, subject to all sorts of fears; such children often form inferiority complexes or are lacking in concentration and are consequently more backward in scholastic achievements than would be accounted for by their intelligence quotient. The causes of these defects are very numerous and examples were given in the Article such as (1) Direct inheritance, (2) Injury to the germ plasm due to racial poisoning—alcohol, rheumatism, tuberculosis, lead and syphilis, (3) Nervousness of the parents contributes to the nervousness of their children by means of the psychic atmosphere, with which they surround them, (4) Shock or injury, (5) Reflex causes such as astigmatism, (6) Deficiency diseases such as lack of calcium, iron, iodine or the anti-neuritic vitamin B.

With such a formidable list of causes of nervous instability, it is obviously useless to attempt to give advice with regard to methods of prevention or of training the child, without a sincere and complete examination from the physical, mental and environmental points of view. To carry out this enquiry, a team of workers has been provided and the following steps are taken in each case before sending the child to this new school:—(1) The teacher reports the case stating the nature of the problem. (2) The Psychologist examines the child, sees the parents and makes a detailed report. (3) The After-Care Officer visits the home and reports. (4) The School Medical Officer examines the child in the presence of the parents, having all the reports relating to the case before him. He then gives advice with regard to the type of training required.

At the present time there are 100 children in the new school which has proved to be a very valuable addition to the existing schools and has enabled certain children to receive an extra amount of special attention. Its success is largely due, in the first place, to Miss Tydeman, the psychologist, who is thorough, competent and tactful in her work; and in the second place, to Mr. Dewhirst, the headmaster, who not only has the necessary experience, but a great gift for training such children.

The above brief resumé mentions a few points in which the School Medical Service is working for the physical and mental betterment of the children. Such work must necessarily entail considerable expense, for human life is a precious and complex mechanism which must be handled with care and discretion, especially in the early years. If there should be a "break down," its cause must be sought by patient investigation, in order to repair the defect or to prevent its recurrence. A cursory examination or anything in the nature of a "lightning diagnosis," no matter how attractive to the onlooker, will be of little benefit to the individual concerned. Consequently, it is clear that Local Authorities who fulfil the duty imposed by the Education Act to provide medical inspection and treatment for all elementary school children must have considerable expenditure of time, skill and money. In the present financial emergency, the Nation is naturally considering the question of expenditure. There are some who ask : "Can we afford to spend as much as we are doing at present on this social service?" Sir George Newman, in one of his early Reports, says "The existence and strength of the Nation ultimately depend upon the survival of its children and their physical and mental health." If this is true, and surely no one can doubt it, a more pertinent question is : "Can we afford to do without medical care and treatment of school children?" If we fail to pay attention to the rising generation we must increase immensely the cost of supporting the invalids and inefficients in the future.

The following is the actual cost of the School Medical Service in Leicester for the last two years :—

For the year ending March 31st, 1932, the total cost was £17,209; of this amount £8,271 was paid by the National Exchequer, leaving £8,938 to be paid for from the Rates.

For the year ending March 31st, 1933, the total cost will not exceed £17,085; of this amount £8,205 will be paid by the National Exchequer, leaving £8,880 to be paid for by the Rates. That is to say, in each of these two years out of an Education Rate of 3/8⅜ only about 1⅜d. was required for the Medical Department.

I.—STAFF.

The staff consists of five whole-time and five part-time Medical Officers (including two oculists, an orthopædic surgeon, an aurist, and an anæsthetist), four whole-time dentists, two instructresses in remedial exercises and one in speech exercises, fourteen nurses, four dental attendants, a chief clerk, a technical clerk, ten staff clerks, three enquiry officers, a clinic attendant, a ward-maid, and two caretakers.

II.—CO-ORDINATION.

The closest co-operation continues to exist between the School Medical Service and the Public Health Department in matters affecting the control of infectious diseases in schools.

To prevent any duplication of Treatment Centres, the School Clinics are available for the treatment of patients from various medical departments of the Corporation, and a detailed summary of the co-ordination of Clinic Services was given in my Annual Report for 1931.

III.—THE SCHOOL MEDICAL SERVICE IN RELATION TO PUBLIC ELEMENTARY SCHOOLS.

In recent years, the rapid development of estates on the outskirts of the City and the general tendency for the people to decentralise, have added considerably to the difficulty of providing suitable school accommodation in the new districts, especially when owing to financial stringency building operations have been greatly restricted. To meet the need in the Braunstone area without erecting a new building, the Braunstone Hall has been adapted for use as an Elementary School to accommodate 370 scholars. This house, which was previously a private residence, is in a delightful situation and has some large light rooms which are quite suitable for teaching purposes, but some of the rooms, especially the one on the right of the entrance, are dark and not suitable for ordinary classroom work.

Temporary classrooms have also been erected at Overton Road Infants' Department to accommodate 174 scholars, and another temporary school is in course of erection at Balfour Street.

A new school has been erected in Taylor Street to accommodate 576 juniors and 300 infants, and the Junior Department at the Coleman Road School has been completed for 284 children.

A plot of ground in Slater Street has been rented from the Highways Committee for use an an additional playground for Slater Street School. This improvement has been required for many years. In February, 1909, I reported that the playground at this school was totally inadequate and consequently only very few children could be in the playground at the same time. The arrangement then in force was for some of the children to be at play during the whole of the day, and the resulting noise prevented one of the classrooms being used for teaching purposes. To get over this difficulty, I recommended that an adjoining piece of ground, used by the Highways Committee for storing building materials, should be acquired for a playground and that access to the land should be obtained by making two new doors. At that time the cost of carrying out this improvement was considered prohibitive and a minute records that the suggestion should be borne in mind until a suitable opportunity arises to carry it out.

During the year, several classrooms for the younger children in the Infants' Department have been re-furnished with dual folding tables and chairs in place of obsolete dual desks and large tables.

In my last Annual Report I dealt with the subject of school furniture at some length, and described a method of measuring to determine the size of the desk required for each child, and gave advice with regard to the correct attitude of the child when seated at school.

After measuring a very large number of children and their desks, I concluded that very often the seat is too high for the child and also that the fixed desk is too high for the seat. It seemed advisable, therefore, to determine what size desk is required for the average child for each year of its school life. With this end in view, my colleagues and I have measured some 2,500 children with regard to (1) the average length of leg, including boot, and (2) the average distance from the seat to the elbow. These two measurements may, for convenience, be called the "length of leg" and the "difference." Before carrying out this investigation, it was necessary to have an instrument with which these measurements could be taken quickly and accurately. Mr. Thompson, the School Architect, designed what I wanted, but this proved to be rather cumbersome and difficult to work with quickly, consequently, I had a simple instrument made consisting of a 20in. boxwood measure with a movable bar and spring on it. This has proved quite a useful instrument. The measurements can be very rapidly taken, and with care, give a sufficiently accurate record. In the case of the length of leg there is no difficulty. The child should be seated on something of approximately the right height with the leg of the child vertical and the thigh horizontal; the distance from the floor to the thigh immediately behind the knee is taken; but in measuring the "difference" there is more liability to error unless care is taken to see that the child is seated correctly. The child should sit erect with the shoulders level. There is a tendency for children to raise the shoulder that is being measured and thus increase the height of the "difference." I suggest that each school should possess one of these measures so that teachers may satisfy themselves that their pupils are on seats of a proper size. If 100 are bought at a time, they will cost 4/- each.

The following table shows the average "length of leg" and "difference," to the nearest half inch for each year of school life.

Age.	Length of Leg.	Difference.	Age.	Length of Leg.	Difference.
5	11 in.	6½ in.	11	15 in.	7½ in
6	11½ ,,	7 ,,	12	15½ ,,	7½ ,,
7	12 ,,	7 ,,	13	16 ,,	8 ,,
8	12½ ,,	7 ,,	14	17 ,,	8 ,,
9	13 ,,	7 ,,	15	17½ ,,	9 ,,
10	14 ,,	7 ,,			

The statistics relating to boys and girls were kept separately, but the actual difference was so small as to be negligible for practical purposes. As is well known, girls are taller than boys between 12 and 14 years of age, and as might have been expected, the girls proved to have slightly longer legs than the boys at these ages, but at 14 and 15 years of age, the reverse obtains. Possibly, a part of the increased length of leg in the case of the older boys was due to thicker boots, as the girls at Secondary Schools would be wearing house shoes in the classroom.

Another interesting point revealed by this enquiry was that the "difference" was above the average for the length of leg, if the child was stunted for its age. Many children who are stunted have suffered from rickets, in which disease the long bones often fail to develop as they should, the short leg being associated with the short arm, and if the pelvis has grown normally, the distance from the seat to the elbow would appear large, when compared with the length of the leg.

On comparing a large number of children with the same length of leg, there may be as much as 2½ inches or even 3 inches variation in the "difference." It is, therefore, clear that the fixed seat and desk can never be quite satisfactory, but if the seat and desk are separate pieces of furniture there is more opportunity of correctly seating the individual child. Personally, I advocate the use of a chair and table, the latter being easily convertible into a sloping desk. An illustration of this desk can be seen on page 78. One of the objections generally given to a separate chair and convertible table is the additional expense. The cost of the desk and chair seen in the illustration, if 200 desks are obtained at one time, would be 19/3 per place. A similar desk, with lift-up seat attached, would be 17/3 per place.

In furnishing a new school, it is important to have some standard as a guide to the number of the different sizes of desk that would be required. Based on the statistics obtained from the above enquiry, I have prepared the table below for this purpose. In using this table, it should be understood that the figures refer to the average child for each age. In every class there will be both bigger and smaller children. It is generally found that half the number will be of average size, one quarter a size above and one quarter a size below. There may be a few out-size children who will require special accommodation.

The question of the correct attitude of the child when seated at school has been followed up during the year, and to promote interest in this subject, in November I gave a Lantern Lecture to the school teachers on "Training the Child in Correct Posture," and an epitome will be found in Appendix A, page 70.

STANDARD SIZE OF DESK.

DIMENSIONS EXPRESSED IN INCHES.

Number of Desk ...	1	2	3	4	5	6	7	8	9	10	11
Age of Child ...	5	6	7	8	9	10	11	12	13	14	15
Height of Desk ...	18	19	19½	20	20½	21½	22½	23½	24½	25½	27
Height of Seat ...	11	11½	12	12½	13	14	15	15½	16	17	17½
*Height of Back Rest	8	8½	8½	9	9	9	9½	9½	10	11	11½
Depth of Desk ...	15	16	16	16	16	16	16	16	17	17	17
Length of Desk ...	36	36	40	40	40	40	40	42	42	44	44

**Height of back rest means the distance from seat to top of rest. The rest itself should be 3-in in depth.*

IV.—MEDICAL INSPECTION.

Routine medical inspection and the inspection of "special" children brought forward by the Head Teachers is carried out in the school premises except in two instances where the accommodation is limited; in these cases the inspection is held in the adjoining parish rooms. An Inspection Clinic is also held for a part of each morning (except Friday) at Richmond House. The children are referred to the Clinic by the medical officers, teachers, attendance officers and parents.

(*a*) *Age Groups.*

The following three groups of children were inspected during the year:—

(*a*) Entrants.

(*b*) Intermediates, i.e., all children between 8 and 9 years of age, and those between 9 and 10 who had not been previously examined as "Intermediates."

(*c*) All children between 12 and 13 years of age, and all who had not been examined after reaching the age of 12.

The total number of children examined on routine inspection during the past year was:—

Elementary Schools, 10,380 as compared with 9,924 in the previous year.

Secondary Schools, 1,544 as compared with 2,007 in the previous year.

It will be seen that the number of elementary children examined on routine inspection was greater in 1932 than in 1931.

(The statistical particulars are to be found in Table I. at the end of the Report.)

(*b*) *Extent to which the Board's Schedule of Medical Inspection has not been followed and the reason for such departure.*

The Board's Schedule of Medical Inspection has been followed.

(*c*) *Steps taken to secure the early ascertainment of crippling defects.*

All crippled children in attendance at school are examined each year by the medical officers. In each case a special schedule is attached to the ordinary schedule on which notes are made with regard to the present condition, the nature and continuity of treatment, or the need for further treatment. In addition, all children who are suffering from chronic illness, or who are away from school for three months, are examined by the School Medical Officer at the Inspection Clinic at least once a year, and many of these children are seen each month.

(*d*) *Statement showing the extent to which disturbance of school arrangements was involved by the inspections.*

Each child when inspected is withdrawn from school for about half an hour, and when re-inspected for not more than a few minutes.

V.—FINDINGS OF MEDICAL INSPECTION.

(a) *Uncleanliness.*

The percentage number of children whose hair was found to be clean was 97.2, as compared with 97.7 per cent. in the previous year. The percentage number of children who required bathing was 1.18 in 1932, and 2.07 in 1931.

It should be understood that the above figures refer to examinations of scholars by the School Medical Officers. Full particulars regarding the amount of uncleanliness amongst the scholars in the Elementary Schools, and the amount of work done by the School Nurses in connection with the Cleanliness Scheme, will be found on page 18 of this Report.

(b) *Minor Ailments.*

Minor ailments of Skin, External Eye, Ear, etc., are included under the appropriate headings.

(c) *Tonsils and Adenoids.*

On routine inspection, 1,465 children were found to have slight defect of the nose and throat, but these were not sufficiently serious to warrant treatment. In addition, there were 612 cases that were referred for treatment. There were also 1,734 cases referred for treatment which were discovered at the Inspection Clinic or amongst the special children.

(d) *Tuberculosis.*

During the year, 4 cases of definite, and 62 cases of suspected pulmonary tuberculosis, together with 27 non-pulmonary cases, were found on routine inspection. Of these, 13 were referred for treatment, and 80 kept under observation.

Children known to have definite signs of acute pulmonary tuberculosis are excluded from School. They have been seen frequently at the Inspection Clinic during the year.

(e) *Skin Disease.*

There were 119 cases of skin disease found on routine inspection; 45 of these were referred for treatment. In addition, 3,571 special cases were referred for treatment.

The number of cases of skin diseases and minor ailments found on routine medical inspection is extremely small. This is accounted for by the fact that the Nurses when visiting the schools in connection with the Cleanliness Scheme refer such cases to the School Clinics for diagnosis or treatment. Further, the Teachers and the School Attendance Officers are aware that the Clinics are open each day and that any child requiring examination can be sent direct to these Clinics.

(f) *External Eye Disease.*

On routine inspection, 171 cases of external eye disease were found; 37 of these and 214 special cases were referred for treatment.

(*g*) *Vision.*

Of the 1,539 cases of defective vision found on routine inspection, 937 were referred for treatment and 371 were kept under observation. In addition, 1,409 special cases were referred for treatment and 260 were kept under observation.

(*h*) *Ear Disease and Hearing.*

Arising out of routine inspection 303 cases of ear disease and defective hearing were referred for treatment and 46 were kept under observation. There were also 1,322 special cases referred for treatment and 84 kept under observation.

(*i*) *Dental Defects.*

On routine inspection, 1,920 children were found to have four or more decayed teeth. Of these, 254 were referred for treatment together with 166 special cases.

(*j*) *Crippling Defects.*

In the course of routine medical inspection, 31 cases of infantile paralysis, 7 cases of crippling due to tuberculosis, 210 cases of knock-knees, and 19 cases of bow-legs, came under review during the year.

(*k*) *Clothing.*

Of the children inspected during 1932, 99.8 per cent. were found to have satisfactory clothing, while .35 per cent. were found to have poor or very bad boots. An improved condition of boots was found in every case which was re-inspected. The names of all children who were reported to have unsatisfactory boots or clothing were referred to the School Nurse, who examined these children periodically to see that the improvement was maintained.

(*l*) *Enlarged Thyroid.*

The number of cases of enlargement of the thyroid gland discovered during the ordinary routine examinations of 1932 was 39 out of 11,924 children examined, being a percentage of .32. Of these cases, 38 were classified as slight, and 1 as moderate or severe. These cases were distributed as follows :—

		Number examined.	Number found.	Percentage.
Elementary Schools—	Boys ...	5,221	3	.05
	Girls ...	5,159	29	.56
Secondary Schools—	Boys ...	675	—	—
	Girls ...	869	7	.80
		11,924	39	.32

The proportion of children suffering from this condition was .79 in 1928, .50 in 1929, .73 in 1930, and .46 in 1931.

VI.—INFECTIOUS DISEASE.

The following cases were notified by the Head Teachers during the year: Chickenpox, 832; Diphtheria, 43; Measles, 1,824; Mumps, 1,386; Ophthalmia, 4; Ringworm, 143; Scabies, 30; Whooping Cough, 702; Scarlet Fever, 232; the actual number of cases of Scarlet Fever notified to the Medical Officer of Health of children between 4 and 14 years of age, was 324 (140 boys, 184 girls). There were also 51 cases of Smallpox notified in children of school age (29 boys and 22 girls).

There has been an increase in the number of cases of Chickenpox, from 565 in 1931 to 832 in 1932; Measles, from 1,538 in 1931 to 1,824 in 1932; Mumps, from 765 in 1931 to 1,386 in 1932; Whooping Cough, from 288 in 1931 to 702 in 1932; Scarlet Fever, 179 in 1931 to 232 in 1932.

VII.—FOLLOWING UP.

Review of the arrangements for the following up of children suffering from physical defects, including a summary of the work undertaken by the Nurses.

The name of each child who is found to be defective in the course of medical inspection is placed upon a "Following-up" Card. Upon this card the Medical Officer makes any further notes that are necessary when he re-examines the child in a month's time. If effective treatment has not been obtained, a second notice is sent to the parents and the child is re-examined two months later. In nearly all cases this procedure leads to satisfactory treatment, but if treatment has not been obtained, the "Following-up" Card is handed to the School Nurse. Upon this card she makes any necessary notes when she visits the home.

There are 15 Nurses on the staff. The whole time of three Nurses is occupied in connection with operations performed at Richmond House, three Nurses devote the whole of their time to the orthopædic and light treatment, and one to the Open-air School, Western Park. Two Nurses confine their attention to the Chester Street Clinic and to assisting the Attendance Officers in the Willow Street area. The remaining six are occupied in the following duties:—

At Schools.

(*a*) Systematic surveys under the Cleanliness Scheme.

(*b*) Investigation of outbreaks of infectious disease.

(*c*) Following up cases discharged from the Clinic as cured, to see that there is no relapse; that spectacles are worn regularly, and that breathing exercises are maintained where necessary.

At the Clinics.

(*a*) Attendance with the Medical Officers at the Inspection Clinics.

(*b*) Attendance with the Medical Officers at the Treatment Clinics.

(*c*) Treatment of minor ailments under the supervision of the Medical Officers.

(*d*) Assisting the Surgeon with the operations performed at Richmond House, and nursing the children afterwards.

Visiting Homes.

(*a*) Following-up children whose defects have not been remedied.

(*b*) Interviewing parents concerning defects found: such as uncleanliness, bad clothing, etc.

(*c*) Ascertaining cause of irregular attendance at Clinics.

(*d*) Visiting—two days after their discharge—children who have had an operation at the Clinic.

A summary of the work of the School Nurses is shown in the following table :—

(1) Total number of visits paid to Schools	956
(2) Total number of examinations of children	86,873
(3) Total number of individual children found unclean	1,112
(4) Total number of individual children sent home	
(dirty body) once	29
twice	—
three times	—
(dirty head) once	361
twice	39
three times	26
(5) Total number of visits paid to homes	4,953
(6) Total number of children found with poor boots	149
(7) Total number of children found with poor clothing	58

Of the 4,953 visits paid to homes, 2,944 were made by the two Nurses who assist the School Attendance Officers in the Willow Street District.

VIII.—MEDICAL TREATMENT.

Malnutrition.

In Table II., 184 cases of malnutrition are recorded—87 of these cases had been examined in the previous year and came forward for re-examination—106 were referred for treatment and 78 kept under observation. Of the 106 cases referred for treatment, 58 were treated at the Artificial Sunlight Clinic and two elsewhere.

(*a*) *Minor Ailments.*

These are dealt with under the heading of Skin, External Eye, Ear, etc.

(*b*) *Tonsils and Adenoids.*

Of the 2,346 children referred for treatment during the year for defects of the nose and throat, 1,564 were treated at the Clinic as compared with 1,668 in 1931.

Details of the results of treatment for defects of the nose, ear, and throat will be found in Mr. Keen's report on page 26.

(*c*) *Tuberculosis.*

During the year, 13 children between 5 and 14 years of age have been admitted for treatment to the Children's Sanatorium. I am indebted to the Medical Superintendent for a weekly notification of the names and addresses of the children who have left the Sanatorium. These patients, together with those discharged from the Sanatorium in 1931, have been recently examined, and the following table shows the number of these children who are now at school, etc.

CHILDREN DISCHARGED FROM THE SANATORIUM.

	1931	1932
At School	16	8
Not at School	—	3
Exempt	2	1
	18	12

The number of children treated in the Sanatorium during the last two years is considerably less than usual.

As I stated in my last Annual Report, the majority of children suffering from tuberculosis are treated at the Hospital for Smallpox when it is not required for treatment of that disease. Since there has been a large number of cases of Smallpox during the year, it has been necessary to exclude many tuberculous children from the benefits of Sanatorium treatment.

(*d*) *Skin Disease.*

During the year there were 3,616 cases of skin disease referred for treatment, as compared with 3,567 in 1931. Of these, 3,206 were treated at the School Clinics, and 389 otherwise. The figures for the previous year were 3,094 and 451.

The table on page 20 shows the number of attendances, etc., made at the Skin and Minor Ailments Clinics.

SKIN AND MINOR AILMENTS CLINICS.

DETAILS OF TREATMENT AND INSPECTION.	RICHMOND HOUSE.		CHESTER STREET.		MARRIOTT ROAD.		X-RAY CLINIC.		TOTAL.	
	Cases.	Attend-ances.	Cases.	Attend-ances.	Cases.	Attend-ances.	Cases.	Attend-ances.	Cases.	Attend-ances.
FOR TREATMENT—										
Ringworm	57	366	56	914	21	298	32*	84	166	1,662
Scabies	15	79	9	46	2	5	—	—	26	130
Impetigo	202	901	501	7,658	99	1,076	—	—	802	9,635
Miscellaneous	367	2,039	1.395	14,201	358	6,208	—	—	2,120	22,448
TOTAL (Treatment)	641	3,385	1,961	22,819	480	7.587	32	84	3.114	33,875
Number of individual children treated	*575*	—	*1.506*	—	*446*	—	*32*	—	*2,559*	—
FOR INSPECTION—										
Ringworm	29	71	3	6	2	9	—	—	34	86
Scabies	6	16	15	32	—	—	—	—	21	48
Impetigo	15	22	—	—	—	—	—	—	15	22
Miscellaneous	66	92	327	829	48	150	—	—	441	1,071
TOTAL (Inspection)	116	201	345	867	50	159	—	—	511	1,227
Number of individual children inspected	*115*	—	*250*	—	*43*	—	—	—	*408*	—
TOTAL (Treatment and Inspection) ...	757	3,586	2,306	23,686	530	7,746	32	84	3,625	35,102
Total number of individual children treated and inspected during the year	*690*	—	*1,756*	—	*489*	—	*32*	—	*2,967*	—

*This figure includes 3 County cases.

Report on the Artificial Sunlight and X-Ray Clinics.

By T. A. Carson, M.B., B.CH.

Artificial Sunlight Clinic.

In last year's Annual Report I gave a detailed description of the method of treatment, and as there has been no alteration it will not be necessary to repeat the information.

Numbers Treated.

The total number of children treated during 1932 was 464. This included 228 school children and 236 infants from the Baby Welfare Centres, compared with 274 and 201 respectively for the previous year. Of these, 128 school children and 187 infants were new admissions. The remainder viz. :—100 school children and 49 infants had already received some treatment towards the end of 1931. The number of treatments given was 7,743, and the attendances during the year amounted to 8,519, while the total medical examinations numbered 776.

Conditions Treated.

(*a*) *School Children.*

It will be convenient when mentioning the conditions treated to give some idea of the results obtained. I shall deal only with those children who *finished* their treatment and were discharged. These totalled 111 and the following are the details :—

Anæmia	33	Cervical Adenitis	7
Malnutrition	31	Various	13
Debility	27		

(*i*) *Anæmia.*

As in last year the best results were obtained in this group. Out of a total of 33 cases, the results of no less than 22 were marked very good, and 7 good. The remaining 4 were somewhat improved or unchanged. In practically every case the hæmoglobin showed improvement, often a marked increase. Most of these cases were associated with some degree of malnutrition and debility, which showed a similar improvement. The child in a typical case became brighter, more alert, less nervous. Both parents and teachers frequently testified to the improvement shown. The same remarks apply more or less to the other groups treated.

(*ii*) *Malnutrition.*

About two-thirds of the cases in this group gave good or very good results, the remainder fair. Other things being equal, I find that the younger the child, the better the result, and this applies in a measure to all the conditions treated. Older children showed more improvement in general health than increase in body weight.

(*iii*) *Debility.*

These cases did exceedingly well, in fact, even better than the malnutrition cases. Very often they were convalescent from measles, whooping-cough, removal of tonsils, or other complaint. The treatment acts as a tonic, comparable to a sea-side visit. Probably a good part of benefit shown was due to the increase in hæmoglobin.

(*iv*) *Cervical Adenitis.*

All cases except one gave excellent results. The improvement in general health was a feature in this group. Cases exhibiting abscess formation were not treated, radical measures being considered necessary.

(*v*) *Various.*

All cases of simple nervousness responded well, but required prolonged treatment. Cases of alopecia did not give very good results although the treatment was continued and supplemented by local application. One case of backward development was given a very long course, but only showed improvement physically. The only case of T.B. Abdomen sent for treatment showed decided improvement. My experience with bronchial and rheumatic conditions in general has been disappointing, though in two cases of Asthma at present under treatment, the mothers state that the attacks are less frequent and less severe.

(*b*) *Infants.*

By arrangements made between the City Education Committee and the City Health Authority, cases selected by the Medical Officers of the Maternity and Child Welfare Departments are sent here for treatment. A large majority of all infants selected received treatment, only two cases being found unsuitable.

The total number of infants who *finished* their course during 1932 was 99, and they may be divided into four groups as follows :—

Rickets	67	Debility	12
Malnutrition	12	Various	8

(*i*) *Rickets.*

This was much the largest group and the results were again very good. Out of a total of 67, those showing good or very good results numbered 56, and the remainder were mostly marked fair. One child contracted whooping cough and succumbed. Early rickets gave much the best results. Cases of some standing, including a few from the Orthopædic Department, gave only a moderate reaction, even after prolonged treatment.

(*ii*) *Malnutrition.*

All the cases in this group did remarkably well. This applied specially to that extreme form of wasting known as marasmus. There were six of these cases and the results were remarkable. One child, however, in whom this disease was too far advanced, succumbed to an intercurrent affection. These severe cases were given two or even three courses of three months each.

(*iii*) *Debility.*

Most of these cases were due to errors in diet, neglect, or previous illness. Nearly all showed improvement, most marked in those with anæmia. An improvement in colour, energy and appetite was soon noticed. One case was unchanged.

(*iv*) *Various.*

Three cases of Anæmia did very well. The remainder, consisting of cases of Bronchitis, backward development, and prematurity, all showed varying amounts of improvement before being discharged.

Abandoned Treatment.

No less than 38 cases from the Welfare Centres after receiving a few weeks' treatment, failed to attend, and another 15 cases after being medically examined and entered in the books, did not return.

General Remarks.

Only those cases are selected which it is expected will re-act to the treatment. Ordinary cases of asthma and bronchitis are not treated. Sub-acute rheumatism seems to do fairly well. In infants, excellent results are obtained in early rickets, malnutrition and digestive troubles. In school children, anæmia takes first place, followed closely by malnutrition and enlarged lymphatic glands. The commonest feature is an increase in hæmoglobin. With care in the selection of cases, the results will more than justify all the expense and trouble entailed.

X-Ray Clinic.

A Clinic for the treatment of scalp ringworm by X-rays is held at Richmond House on Wednesday and Friday afternoons, and during the past year 32 children attended the Clinic as compared with 49 in 1931.

Of the cases treated, 17 were boys and 15 girls; 29 came from the elementary schools, and 3 from the county area.

The treatment in all cases achieved its purpose and no erythema or ill-effects of any kind occurred after treatment: 28 were remedied, and 4 are under treatment.

The time that elapsed between the application of the rays and the return to school was an average period of 23 days.

The total number of attendances made by these children was 84.

Several X-ray photographs were taken of injuries and proved of considerable value. In addition, a few cases of Alopecia Areata were treated with ultra violet light and radiant heat.

(*e*) *External Eye Disease.*

There were 251 cases of external eye disease referred for treatment during the year. Of these, 194 were treated at the Clinic and 32 otherwise. The figures for the previous year were 261 referred, of which 193 and 49 were treated.

(*f*) *Vision.*

The number of cases referred for refraction was 2,346 in addition to those cases of external eye disease mentioned in (*e*) above. Of these, 1,500 were treated at the Clinic, and 281 otherwise. (Nearly all these cases were treated at the Public Medical Service Ophthalmic Department.) The corresponding figures for 1931 were 2,167, 1,396, and 233 respectively. There were 109 children who were found not to require glasses.

(*g*) *Ear Diseases and Hearing.*

During the year 1,625 children suffering from ear defects were referred for treatment, and of these, 1,456 attended the Clinic, 55 received treatment elsewhere. The figures for the preceding year were 1,781 referred for treatment, 1,610 treated at the Clinic, and 43 otherwise. The table on page 25 shows the nature of the treatment the patients received at the Clinic and its results.

TREATMENT OF EAR DEFECTS.

Nature of Defect.	No. of Cases.			Treatment.				Attendances in Out-patient Dept.			Result of Treatment.		
	New.	Old.	Total.	T. & A.	Dry Dressing	Cerumen.	Mastoid.	Total number to Surgeon.	Average number to Surgeon.	Total number to Nurse.	"Remedied."	Under and awaiting Treatment.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
I. Discharging Ear	412	61	473	115	369	11	5	1,597	3·3	306	425	48	473
II. Deafness	842	126	968	811	7	295	—	1,596	1·6	33	898	70	968
III. Other Defects	15	—	15	2	12	2	—	43	2·8	21	15	—	15
Total	1,269	187	1,456	928	388	308	5	3,236	2·2	360	1,338	118	1,456

It appears from the above table that of the 473 cases of discharging ears, only 115 had tonsils and adenoids removed; this is not the case, as this operation was performed on many of the old cases in the previous year.

Report on Nose, Ear, and Throat Clinic.

By J. A. Keen, F.R.C.S.

Tonsils and Adenoids.	Adenoids.	Turbinectomy, etc.	Mastoid.	Other.	Total.
*1,241	43	5	5	2	1,296

* 928 of these cases are also included in the Table relating to the Treatment of Ear Defects, on page 25.

The above table shows the numbers of the various kinds of operations which were performed. The five "Turbinectomy" were partial resections of the inferior turbinate bones with removal of adenoids. Among the five "Mastoid" operations, three were radical mastoid operations for very old-standing otorrhœa, and two were emergency operations for acute mastoid abscess. The two "Other" operations were cases of *Choanal polypus,* a very large type of nasal polypus, and of *Paracentesis,* or incision of the ear-drum for relief of an acute middle-ear abscess.

A few cases among the 1,284 tonsil and adenoid operations may be specially mentioned. In one patient the operation was done because the boy was an obstinate *Diphtheria-carrier,* and for that reason he could not be discharged from the Isolation Hospital. It is found that tonsillectomy generally cures this condition. By arrangement he was brought to Richmond House and I performed the operation within a short time of admission, at the end of the morning's list of other cases. He returned to the Groby Road Hospital by ambulance in the afternoon in order to minimize the risk of infecting the other children in the ward. Two other cases were instances of removal of a *foreign body,* as well as tonsillectomy.

Boy, aged 10. Date of operation 11-4-32. Removal of a foreign body, an old plug of cotton wool encrusted with cerumen, from the right ear followed by tonsillectomy.

Boy, aged 9. Date of operation 29-11-32. I removed a large *rhinolith,* a calcareous stony mass, from the right nasal cavity and also adenoids.

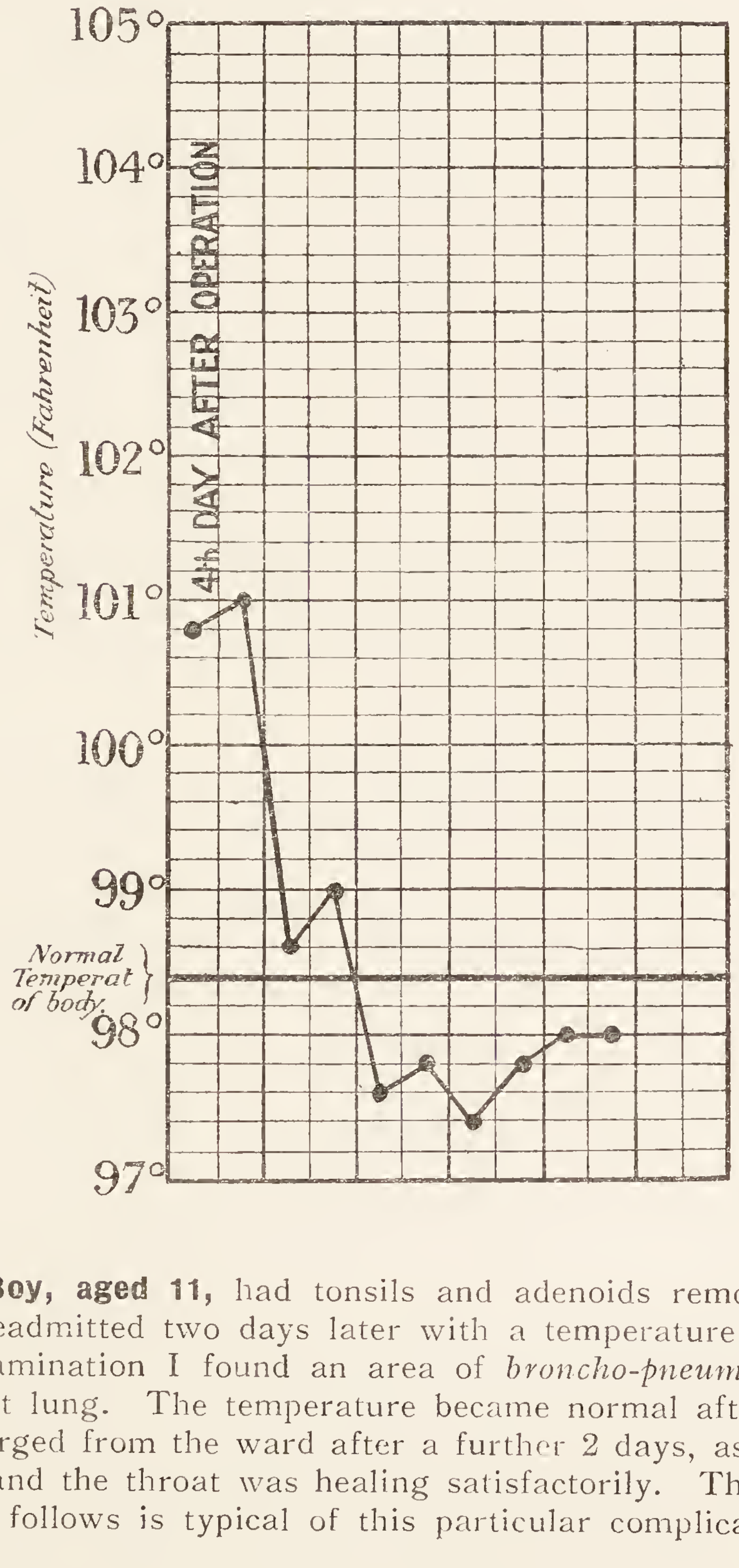
Such a large number of operations, all under full general anæsthesia, cannot be undertaken without meeting serious complications from time to time, and unfortunately we have not been quite free from such cases during the year. There was one anæsthetic fatality, a boy aged 7. An inquest was held and the post-mortem examination revealed an enlarged thymus gland. One other child, a boy aged 4, died suddenly during the night, some twelve hours after the operation. This case recalls one similar occurrence reported in 1925. Although no post-mortem examination was done, it is almost certain that the case also belongs to the group of so-called "status lymphaticus," a condition which renders patients liable to sudden death from comparatively slight shocks. No clinical test has yet been discovered which would enable one to diagnose "status lymphaticus" during life.

Bleeding-time tests. The bleeding-time test, which I described in the 1931 Report, was applied in 11 cases this year. Some of these children were said to "bleed easily," or to suffer from frequent nose bleeding. In others there was a family history of hæmophilia, either the father or a brother, and the test was done as a precautionary measure before the operation. None of them showed any excessive hæmorrhage after enucleation of tonsils and adenoids.

Re-admissions. Eight children were re-admitted to Richmond House after the tonsil-adenoid operation as follows :—

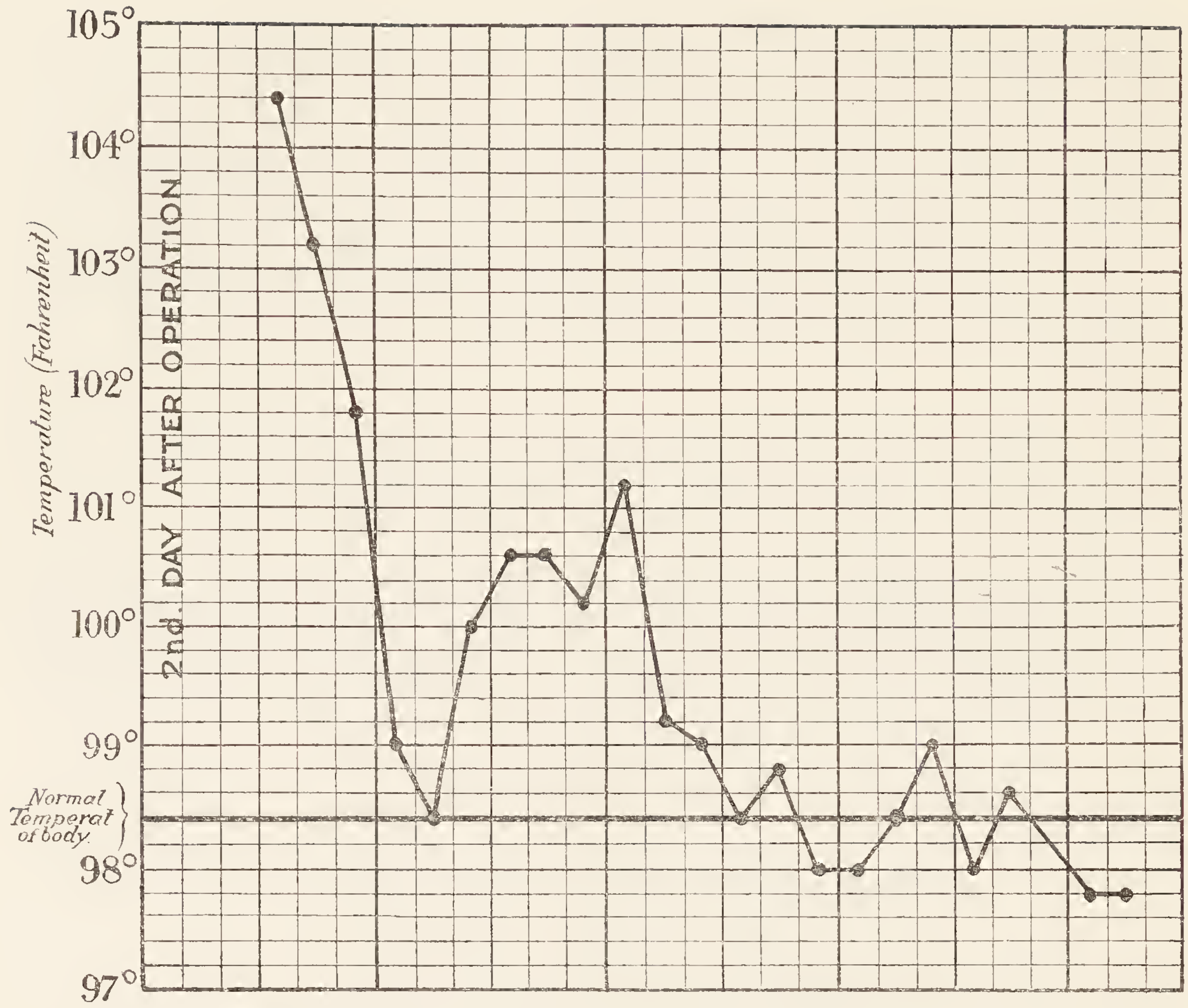
1. **Girl, aged 6,** had tonsils and adenoids removed on 5-1-32. She was readmitted 4 days later (9-1-32) with a temperature of 101 degrees and signs of an *acute bronchitis*. The temperature quickly became normal (see Chart below) and she was discharged on 13-1-32, when the temperature had remained normal for several days.

CHART OF CASE 1



2 **Boy, aged 11,** had tonsils and adenoids removed on 1-2-32. He was readmitted two days later with a temperature of 104 degrees and on examination I found an area of *broncho-pneumonia* at the base of the left lung. The temperature became normal after 3 days. He was discharged from the ward after a further 2 days, as the lung was quite clear and the throat was healing satisfactorily. The temperature chart which follows is typical of this particular complication.

CHART OF CASE 2.



3. **Girl, aged 10,** had tonsils and adenoids removed on 17-3-32. She had a much enlarged cervical gland on the right side before the operation. During the convalescence period after operation the gland became inflamed and soft. The patient was readmitted over a fortnight after tonsillectomy (5-4-32) when the throat was already quite healed. With fomentations the *glandular abscess* broke. She could be discharged from the ward after a few days and the sinus healed satisfactorily.

4. **Boy, aged 5,** had tonsils and adenoids removed on 8-6-32. He went home the next morning, but was readmitted on the same day as the mother said that his "legs were paralysed." The condition was diagnosed as *tetany,* a rare disease in which a spasm of certain leg and arm muscles occurs. The boy recovered quickly and was discharged from the ward after 5 days.

5. **Girl, aged 13,** had tonsils and adenoids removed on 30-6-32. Five days later she was re-admitted during the night for a *secondary hæmorrhage* from the throat. She was given an injection of coagulen ciba. No further bleeding occurred and the subsequent convalescence was normal.

6. **Girl, aged 3,** had tonsils and adenoids removed on 13-10-32. She was readmitted a fortnight later (27-10-32), as I thought that she had developed a peritonsillar abscess which required opening. Before doing a further operation I took a swab which was positive to *diphtheria* and the child was transferred to the Isolation Hospital. Subsequently I learnt that another child in the family had developed diphtheria. This is clearly a case of an intercurrent illness during the two weeks' convalescence period from tonsillectomy.

7. **Boy, aged 7,** had tonsils and adenoids removed on 1-12-32. He was admitted 5 days afterwards on account of severe pain in the throat. This was due to a mild septic infection in the pharynx and *toxæmia* The temperature remained normal. He was kept in the ward for two days and the subsequent convalescence was undisturbed.

8. **Boy, aged 10,** was readmitted 5 days after operation and kept in the ward for 2 days, after which convalescence was normal. This is another instance of mild sepsis and *toxæmia,* resembling case 7.

The preceding cases are examples of the various types of medical and surgical complications which may arise after tonsillectomy. During 1932 I published a paper on this subject which was based on the case-records of the Leicester School Clinic during 10 years (1921-1930)*. The complications which may arise, apart from the question of hæmorrhage, were classified and the main groups were as follows :—

I. Pulmonary Complications, of which cases 1 and 2 are examples, acute bronchitis and broncho-pneumonia. I found that pulmonary complications were to be expected in about 1 in 400 cases, and that they were not due directly to the operation but were intercurrent illnesses which might have arisen apart from the operation.

II. Toxæmia and Septicæmia, on the other hand, are direct complications of the operation and are due to an extension of the infection from the tonsil beds and the denuded area in the naso-pharynx into the general circulation. Among the re-admissions during 1932, cases 7 and 8 are instances of a mild toxæmia.

Infection of the cervical lymphatic glands, as illustrated by case 3, is classified under the toxæmia group. A glandular abscess as a complication of tonsillectomy is distinctly rare. In the 10 years' series there was only one such case.

III. Acute Specific Fevers. I have observed the occurrence of all the various infectious fevers during the two weeks' convalescence period after tonsillectomy. Like the pulmonary infections, these are intercurrent illnesses and cannot be considered to be direct complications of the operation. Case 6 is an example of diphtheria developing during the recovery period.

IV. Acute Otitis Media may occur during convalescence period and is a direct complication of the operation due to spread of the sepsis along the Eustachian tube. In my 10 years' series of nearly 10,000 tonsillectomies there were 60 cases of acute otitis media, or 0.6 per cent. During 1932 I had to deal with this complication 11 times among the 1,284 tonsil-adenoid operations. These children had comparaively slight attacks of otitis media and it was not necessary to re-admit them. They were treated in the out-patient department and the ears became dry in a short time.

In the above article I considered the immediate complications which may arise after tonsillectomy. In the Appendix which appears at the end of the present Report, I deal with another aspect of the Tonsil-Adenoid operation, that is with the end-results. I also answer the criticism which is so often made that too many of these operations are being performed. It is shown that this criticism is erroneous because it is based on misleading statistics.

(*h*) *Dental Defects.*

There are now three separate School Clinics for dental treatment in the city, namely : (i) The Public Medical Service Buildings in Bond Street, (ii) Catherine Street School, and (iii) Marriott Road School.

Particulars of the work done during 1932 will be found in Tables IV., Group IV., of which a detailed summary is shown on page 30.

---

* Keen, J. A., "Medical and Surgical Complications of Tonsillectomy in Childhood," Journal of Laryngology, Vol. XLVII., No. 1, 1932.

DENTAL CLINICS.

Details of Treatment, Etc.	Central Clinic (Bond Street).		Catherine Street		Marriott Road		Total.
	Elementary.	Secondary.	Elementary.	Secondary.	Elementary.	Secondary.	
Sessions devoted to Treatment—(Half-days) ...	1,219		273		139		1,631
Children Treated—New Cases	2,404	109	707	1	333	2	3,556
Re-Inspections ...	3,305	313	970	7	457	17	5,069
Children attending for Re-inspection and found to require no Treatment	40	5	30	—	12	1	88
Attendances made by Children	8,470	767	2,360	20	1,074	39	12,730
Fillings— Permanent Teeth	3,265	689	472	15	229	32	4,702
Temporary Teeth	177	65	31	2	16	2	293
Root Fillings	70	10	4	—	1	—	85
Extractions—Permanent Teeth	1,899	233	643	5	203	10	2,993
Temporary Teeth	10,316	128	3,431	4	1,617	2	15,498
Anæsthetics given—Local	6,257	267	1,836	5	808	9	9,182
General	19	2	—	—	—	—	21
Other Operations	475	99	43	5	27	8	657
Dentures	1	—	—	—	—	—	1
Obturators Fitted	2	—	—	—	—	—	2
Orthodontic Cases Treated	39	11	—	—	—	—	50
Teeth Crowned	1	1	—	—	—	—	2
Scalings	82	26	5	1	5	—	119
Howe's Treatment	150	1	10	—	14	—	175

Report on Dental Clinics.

By F. G. Harvey, B.D.S.

Within recent years many interesting theories have been advanced by various research workers who have been investigating the cause of Dental Caries. Their views vary considerably, but on some points there is a certain amount of unanimity. Apart from oral cleanliness, it is now generally agreed that diet plays a great part in the formation of a sound set of teeth, although other factors, such as environment, and general physical health, must not be forgotten. During the past year the School Dentists have directed the attention of parents to this question of the important relation between the teeth and diet, and on all possible occasions have suggested a suitable dietary. Diet, however, will not remedy defects already present, and usually the parents interviewed are those attending the Clinic with children who have caries already established. Whilst admitting that the condition in all cases cannot be definitely arrested, the beneficial results of having septic teeth extracted and suitable ones saved by filling are impressed on them. All parents do not respond with the eagerness one would expect when they are told their children's teeth require filling, if they wish to avoid extractions at an early date. Until recently dental education in this country has been sadly neglected, and with artificial teeth so easily obtainable, the loss of permanent teeth, even in the young, is regarded very lightly and of no consequence. However, it is gratifying to note that the chair-side talks to children and parents are at last being effective, and the refusals for fillings are now becoming less frequent.

In attempting to overcome the refusals for fillings, especially in those cases where extractions and fillings were necessary, it was decided not to commence any work for a child unless the parent agreed to the full treatment prescribed by the School Dentist. They were told the dental scheme was instituted solely to render the children's mouths as healthy as possible and by having only the extractions done and neglecting conservative work, the aims and objects of the Scheme were being defeated. This procedure had the desired effect of making the parents in many instances agree to the complete treatment. On the other hand there were some children who went away without receiving treatment, but at the next annual inspection they will be examined and given another opportunity of attending the Clinic.

With regard to those children whose parents have persistently refused to have any treatment after being notified following the Annual School Inspections, and who are eventually driven to visiting the Clinic owing to toothache, I do not agree with those School Dentists who consider these children should be debarred altogether from the facilities of the School Clinic. Apart from penalising the child, who is not of an age to choose for himself, much good can be done by talking to these parents and showing them the damage for which they are responsible by the attitude they have taken in the past. A personal talk to them about the Dental Scheme and the methods of treatment is certainly more effective than any number of printed forms sent to them through the post or conveyed home from the school by the child. After such a talk there are very few parents who will not admit it was only their ignorance, or lack of thought, which made them so perverse, and it is found that the child once designated as a "casual," now becomes a regular attender for treatment whenever it is necessary.

During the year all the schools, both Primary and Secondary, have been visited by the School Dentists, who examined a total number of 29,535 children, and an effort was made to re-visit certain schools, after a period of six months, where the response for treatment had been unsatisfactory. It was only possible to re-examine 2,125 children as the time available was limited.

Primary Schools.

In the Primary Schools 58.7 per cent. of the children were found with dental defects. This figure is higher than the corresponding one for the previous year, but too much importance need not be attached to this statement as in many children the defects were very slight, and generally speaking, there is a definite decrease in the number of children with gross septic dental conditions or even rampant caries, which was so common in the children born in the latter years of the Great War or those immediately following it.

Approximately 53 per cent. of the children requiring treatment attended the Clinic. The remainder stated their intention of having private treatment, but subsequent examinations reveal in most cases the removal of troublesome teeth and very little or no conservative treatment.

The number of permanent teeth filled totalled 4,041, including 75 teeth which required the removal of the "nerve" and the insertion of a root filling. These teeth were chiefly the upper central incisors which had a portion of the crown fractured by an accident, such as the child falling in the playground. If the broken tooth was regarded as unsuitable for crowning, owing to the root not being fully formed, very pleasing results were obtained by the use of a translucent synthetic cement and the aid of a special celluloid crown form to restore the contour of the tooth.

Fillings in the Temporary Dentition are only done in selected cases owing to pressure of time, but a greater use is now being made of Howe's method of treating these teeth by silver nitrate and formalin.

It was found necessary to extract 2,745 permanent teeth, 202 teeth were removed for regulation purposes, the remaining 2,543 being too carious for conservative treatment. This means that approximately every third child attending the Clinic had to lose one permanent tooth, which is very regrettable when one is reminded that had treatment been sought earlier the majority of these teeth could have had their period of usefulness prolonged.

One interesting development of the year's work is the increase in the Orthodontic work. It is very encouraging to the School Dentists to find the parents are now bringing their children quite voluntarily to seek advice whenever there is any irregularity in the dentition. In fact this work threatens to increase so much that it will be impossible to treat all the patients who present themselves.

This is specialised work, and it cannot be allowed to infringe on the normal routine work of the Clinic. As the treatment requires many visits, Saturday mornings are usually devoted to this work, thus avoiding undue absence from school.

Secondary Schools.

As previously stated, all the Secondary Schools were visited by the School Dentists during the year, and of 3,262 children examined, 1,749 (53.6 per cent.) were found to require treatment, which was an improvement, the previous year's figure being 54.9 per cent. The extension of the School Dental Service to include the Secondary School children, which was inaugurated last year, has been well received by those parents who were unable to afford the fees of a Private Dentist, and the inspections were of great value to those children who normally visit their own Dentist. Many of them were found with commencing caries and were advised to see their Dentist without delay. Had it not been for the examination, some of these children would not have visited their Dentist until the onset of toothache, when it would probably have been too late for conservative treatment and the dentist would have been called upon to use the forceps.

Finally, I would like to record one interesting development of the year's work. There has been a decided increase in the number of very young children attending the Clinics for treatment. Apart from the "toddlers" who come under the Maternity and Child Welfare Scheme, more parents are seeking the advice of the School Dentists for their children who are of pre-school age. This is certainly an advance in the right direction, and advice and treatment are willingly given to them.

Other Authorities.

In addition to the work mentioned in the Summary on page 30 one dentist devotes one session per week to the treatment of patients under the Maternity and Child Welfare Scheme. Another session is devoted to the treatment of patients under the care of the Mental Deficiency Committee. The work carried out during 1932 is as follows :—

	Maternity and Child Welfare Patients.	Mental Deficiency Committee Patients.
Number of Cases	139	77
Number of Attendances ...	363	147
Extractions—Perm. Teeth ...	277	193
Temp. Teeth ...	120	14
Anæsthetics—Local	124	106
Gas	10	3
Fillings	21	2
Scalings	9	2
Dentures	21	1
Prosthetic Dressings ...	100	—
Dressings	14	3
Consultations	76	—
Repairs	4	1
Number of Sessions during the year	44	24
Number of cases under treatment, 31st Dec., 1932 ...	24	—

(*i*) *Crippling Defects.*

(1) *Incidence of Crippling in the Area.*

The arrangements for the ascertainment and treatment of the cripples in this area were fully dealt with in my previous Reports; as there has been no change it will not be necessary, therefore, to review the position.

Report on the Orthopædic Clinic.

By Leslie Morris, M.D., F.R.C.S.

During the year 1932, the work of the Orthopædic Clinic has steadily increased. In 1930, 485 children attended the department; in 1931, 697; and in the last year, 944. There were 300 new cases referred with orthopædic defects and 145 with postural defects, also 329 old cases with orthopædic and 170 with postural defects were under treatment or supervision during the year.

Detailed statistics in relation to these cases are given below, and the value and principle of orthopædic service are emphasised by their study. Reference shows that as a result of the examination of new cases, 50 per cent., or half, are recommended either for operation, remedial treatment, or appliances. Yet of the old cases 43 per cent., or nearly half, called for similar attention. These figures alone illustrate how important it is that the orthopædic case should be kept under continuous supervision and treatment and not merely dismissed with a single examination as has been often the case in the past.

The Orthopædic Clinic now plays an important part in the public health service of the City and also of the County.

All school children in the City, Secondary and Elementary, suffering from orthopædic or postural defect are referred to the Clinic. As far as possible, parents are expected to contribute towards the cost of treatment, but treatment is never withheld in necessitous cases.

Children from the adjoining schools in the County area also are referred in the same way. In these cases, however, it is necessary to give an estimate of the cost of treatment and await sanction before the treatment can be carried out. This method is not so satisfactory as the former method, and on both medical and financial grounds is a doubtful economy.

Similarly, cases under the Health Department from the Maternity and Child Welfare Centres, the Groby Road Sanatorium, the City General Hospital and the Tuberculosis Dispensary, and also from the County Tuberculosis Department, are referred to the Clinic. Apart from those with Rickets and certain congenital defects, these cases are usually suffering from surgical tuberculosis and it is in relation to this part of the Service that important developments are taking place at the City General Hospital.

The Orthopædic Clinic is the essential centre for all orthopædic work. There is required also an efficient Orthopædic Hospital where, it should be emphasised, open air and educational facilities should be available for those cases requiring long-stay treatment in the Hospital. Last year two wards at the City General Hospital were allocated to form the basis of an Orthopædic Hospital to the Orthopædic Clinic. During the year, sanction was obtained from the Ministry of Health to develop the department and to build open-air accommodation for the cases.

Already the wards function as an Orthopædic Hospital; long-stay treatment is given, education is provided for the children during their stay, and occupational training for the adults. There is an operating theatre fully equipped, a plaster room, a room for artificial light and massage, and building operations have now begun to provide the necessary verandah accommodation. The site at the City General Hospital is ideal for the purpose, and when finished, the verandah will be in a position to receive the maximum of sunshine the climate allows. Apart from sunshine, it is the effect of fresh air on the body that makes open-air treatment so effective in the cases of surgical tuberculosis and life in hospital so healthy for the crippled child.

The other arrangements in relation to the work at the Clinic have continued unchanged.

X-Ray.

This work is carried out in conjunction with the Groby Road Hospital and the efficiency of the newly-installed apparatus is reflected in the standard of the films received.

Instruments and Appliances.

There is still need for improvement in this department and a central instrument and appliance department would be of great help to the Service. At present, orders are distributed to Groby Road and Hooton locally, Ernst and the Royal National Orthopædic Hospital in London, and on occasion to other firms.

Operations.

Full use is made of the beds provided in Richmond House, and the work performed in the theatre has been in every way satisfactory. In view of the increased number of cases attending the Clinic it has been found advisable to operate on alternate Saturday mornings and allocate the other mornings to clinical work. During the year, 54 operations were performed with, of course, the necessary plaster and re-plaster work following operation.

To conclude, since its inception three years ago, the Orthopædic Clinic, originally for school children only, has now developed into the Orthopædic Centre, not only for the City Education and Health Departments, but also for those of the County. This continuity of treatment in one and the same Centre with its own orthopædic surgeon, the ideal of Orthopædic Service, has been achieved. Added to this Public Health Service, the writer has been appointed to the post of Honorary Orthopædic Surgeon to the Royal Infirmary, and is now in a position to direct the treatment of all cripples in this area, and so insure the co-ordination between the Voluntary and Public Orthopædic Centres.

The following tables A and B show the nature of the Orthopædic and Postural Defects seen during the year under review :—

A.—Cases with Orthopædic Defects.

Statistics relating to Patients seen during the year ended 31st. December, 1932.

Primary Examinations—New cases	...	300
Old cases	...	329
Secondary Examinations	... ...	597
Treatments	... ...	3,036
Operations—At Clinic	... ...	54
Total Attendances	... ...	4,316

DISEASE.	New Cases. 1932	NEW CASES.												Old Cases. 1930 1931	OLD CASES.												Grand Total.
		No Treatment Recommended			Treatment Recommended.										No Treatment Recommended			Treatment Recommended.									
					Remedial.			Instruments.			In-Patient Treatment.							Remedial.			Instruments.			In-Patient Treatment.			
		School Medical Service.	Health Departments.	County Authorities.	School Medical Service.	Health Departments.	County Authorities.	School Medical Service.	Health Departments.	County Authorities.	School Medical Service.	Health Departments.	County Authorities.		School Medical Service.	Health Departments.	County Authorities.	School Medical Service.	Health Departments.	County Authorities.	School Medical Service.	Health Departments.	County Authorities.	School Medical Service.	Health Departments.	County Authorities.	
Congenital Defects																											
Absence of Pect. Major	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Achondroplasia ...	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	1
Cleft Palate ...	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Cong. Defects ...	3	2	1	—	—	—	—	—	—	—	—	—	—	7	4	—	—	—	—	—	1	—	—	2	—	—	10
Cong. Dislocation Hip	3	—	—	—	—	—	—	—	—	—	1	1	1	5	3	—	—	—	—	—	—	—	—	2	—	—	8
Diaphyseal Aclasis ...	2	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Erb's Paralysis ...	4	—	—	1	2	—	1	—	—	—	—	—	—	4	2	—	1	—	—	1	—	—	—	—	—	—	8
Exostosis ...	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Metat. Varus ...	9	2	2	3	—	1	1	—	—	—	—	—	—	2	—	1	1	—	—	—	—	—	—	—	—	—	11
Small Limbs ...	4	3	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Spina Bifida ...	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	1
Sprengel's Shoulder ...	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	1
Talipes Calcaneus ...	3	—	2	—	—	—	—	—	1	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	4
Talipes Equino-Varus	5	2	—	—	—	—	—	—	—	—	2	—	1	11	5	1	—	—	—	—	3	—	—	2	—	—	16
Torticollis ...	7	—	2	—	—	—	—	—	—	—	4	—	1	10	7	1	1	1	—	—	—	—	—	—	—	—	17
Wedge Vertebra ...	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	1

Infective.																											
Ankylosis Jaw ...	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	1
A.P.M. ...	24	5	—	1	2	—	—	4	—	4	5	—	3	79	23	—	2	3	2	—	25	—	2	18	—	4	103
Arthritis ...	4	—	2	1	—	—	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	1	—	—	—	5
Fibro-Cystic D. ..	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Osteo Chondritis ...	4	2	—	1	—	—	—	1	—	—	—	—	—	5	—	2	—	1	—	—	—	—	—	2	—	—	9
Osteomyelitis ...	3	—	1	—	—	—	—	—	—	—	1	-	1	8	4	—	—	—	—	—	2	—	—	2	—	—	11
T.B. ...	33	—	9	9	—	—	-	—	—	2	—	2	11	21	—	7	1	—	—	—	—	2	4	—	2	5	54
Injuries.																											
Coxa Vara ...	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	1	—	—	—	—	—	—	1	—	—	2
Nerve Injury ...	4	1	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Rupt. Ext. Tendon ...	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Various ..	4	3	—	1	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	5
Nervous Diseases.																											
Bell's Paralysis ...	2	1	—	—	1	—	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	3
Pseudo Hypertrophies	1	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	2
Spastic Paralysis ..	8	2	1	—	—	1	—	1	—	1	1	—	1	25	10	2	2	3	—	—	3	—	—	5	—	—	33
Nutritional Defects.																											
Renal Rickets ...	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	1
Rickets—Curved Tibia	11	2	1	1	—	—	—	—	1	2	—	1	3	18	3	8	2	—	1	—	—	1	—	1	1	1	29
General ...	36	2	10	3	—	10	1	—	1	—	—	6	3	19	4	14	—	—	—	—	—	1	—	—	—	—	55
Postural Defects.																											
Genu Varum ...	2	1	—	1	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	3
Genu Valgum ...	10	4	2	2	—	—	—	—	1	1	—	—	—	12	7	3	—	—	—	—	2	—	—	—	—	—	22
Hallux Rigidus ...	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Hallux Valgus ..	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	1
Kyphosis ...	—	—	—	—	—	—	—	—	—	—	—	—	—	4	-	—	—	3	—	—	—	—	—	1	—	—	4
Kypho-Lordosis ...	12	1	—	1	10	—	—	—	—	—	—	—	—	16	8	—	1	7	—	—	—	—	—	—	—	—	28
Pes Cavus ...	4	—	—	—	—	—	—	1	—	1	2	—	—	11	8	—	—	—	—	—	2	—	—	1	—	—	15
Pes Plano Valgus ...	4	—	—	—	—	—	—	4	—	—	—	—	—	5	2	—	—	1	—	—	1	—	1	—	—	—	9
Pes Valgus ...	9	1	—	—	4	—	—	1	3	—	—	—	—	2	1	1	—	—	—	—	—	—	—	—	—	—	11
Scoliosis Fixed ...	3	—	—	—	2	—	—	1	—	—	—	—	—	4	—	—	—	1	—	1	1	-	1	—	—	—	7
Scoliosis Postural ...	10	—	—	—	8	—	—	2	—	—	—	—	—	15	7	—	—	8	—	—	—	—	—	—	—	—	25
Various.	20	6	4	—	8	—	—	—	—	—	1	1	—	20	5	8	5	1	—	—	1	—	—	—	—	—	40
Abscess ...	3	1	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Contraction Toes ...	3	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Ingrowing Toe-nail ...	2	—	2	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	2	—	—	4
Warts ...	3	—	—	—	—	—	—	—	—	—	3	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—	4
Nil ...	34	12	17	5	—	—	—	—	—	—	—	—	—	8	3	5	—	—	—	—	—	—	—	—	—	—	42
TOTALS ...	300	58	63	31	38	12	3	15	7	11	26	11	25	329	113	56	17	31	3	2	41	4	9	40	3	10	629

Education	137	Education	225	Education	362
Health	93	Health	66	Health	159
County	70	County	38	County	108

B.—Cases with Postural Defects.

Statistics relating to Patients seen during the year ended 31st. December, 1932.

Primary Examinations—New cases ...	145
Old cases ...	170
Secondary Examinations	339
Treatments	4,352
Total Attendances	5,006
Cases Treated—At Clinic	157
Home Exercises ...	158

DIAGNOSIS.	AT CLINIC.					AT HOME.					Grand Total.
	ELEMENTARY		SECONDARY		Total.	ELEMENTARY		SECONDARY		Total.	
	Boys.	Girls.	Boys.	Girls.		Boys.	Girls.	Boys.	Girls.		
Scoliosis Postural ...	5	8	2	10	25	4	7	4	10	25	50
,, Structural	—	2	—	3	5	2	2	—	1	5	10
Kypho-Scoliosis ...	4	17	5	14	40	5	12	—	5	22	62
Kypho-Lordosis ...	3	7	5	—	15	10	14	1	2	27	42
Kyphosis ..	5	8	2	4	19	4	10	—	8	22	41
Chest Deformity ...	3	2	—	—	5	3	3	—	2	8	13
Pes Valgus ...	1	4	1	7	13	2	—	2	12	16	29
Pes Plano Valgus ...	7	8	6	10	31	3	2	2	10	17	48
G.V. and Pes Valgus	—	1	1	—	2	3	1	2	3	9	11
Pes Cavus ...	—	1	—	—	1	—	—	—	2	2	3
Hallux Rigidus ...	—	—	—	—	—	—	—	—	1	1	1
Freiberg's Disease ...	—	—	—	1	1	—	—	—	—	—	1
Various ...	—	—		—	—	—	4	—	—	4	4
TOTALS ...	28	58	22	49	157	36	55	11	56	158	315

ELEMENTARY 177 (Boys 64, Girls 113). SECONDARY 138 (Boys 33, Girls 105).

IX.—OPEN AIR EDUCATION.

(*a*) *Playground Classes.*

Miss Shaw reports on the work of the Playground Classes at Mantle Road School as follows :—

At present the number of children in this class is 28, with an average attendance of 23.

During the year there were 3 admissions, and 6 children left the class. Of the latter, 2 were exempt on account of age, 2 were transferred to the mixed department of this school, 1 to Haddenham Road School, and 1 to Slater Street School.

The general physique of the children continues to show improvement.

One child is now receiving Artificial Sunlight treatment.

Each afternoon, after resting and weather permitting, the class go for a walk, paying visits to the various Parks, Museum, and other places of interest.

Last year, several children were sent to the Mablethorpe Summer Camp and also to Roecliffe Convalescent Home.

(b) *School Journeys.*

During the year the following school journeys took place:—Historical visits 28, Nature study and Geographical visits 14, Museum and Art Gallery 24, visits to Industrial concerns, etc., 12, Miscellaneous 10.

(c) *School Camps.*

There are no school camps.

(d) *Open-Air Classrooms in Public Elementary Schools.*

The two special classes at Hinckley Road School for rheumatic and debilitated children have continued to do very useful work and have enabled several children to attend school who would not otherwise have done so. The curriculum, the arrangements for travelling and for mid-day meal have continued on the same lines as reported in 1924.

During 1932, 12 boys and 9 girls were admitted to these classes, and 9 boys and 6 girls were withdrawn. The number remaining on the register in December was 25 boys and 25 girls.

(e) *Day Open-Air Schools.*

The Western Park Open-Air School has continued to do excellent work throughout the year. As I gave a full account of the training, methods of selection, and medical supervision of the children attending this school in my last Annual Report, it will not be necessary to report them again. There are 180 children on the rolls at the present time; 32 children returned to the normal schools during the year. Miss Maltby, the Headmistress, reports that the clothing and boots are in much better condition than they were in the previous year. Some boot repairing has been carried out by the older boys, and the children, on the whole, take much more pride in their personal appearance. There has been a remarkable freedom from infectious diseases. There were only 3 cases of whooping cough, all of which were contracted during the Summer holiday. Full advantage was taken of the large amount of sunshine during the year, and every child possesses two sun suits and a sun hat. Although many of the children are extremely backward owing to long absence from school, they are anxious to learn, and many who were admitted with definite inferiority complex have made rapid progress. All the children have improved in health and weight. Four outstanding cases of gaining weight are as follows:—Girl, age 13, gained 26lbs. in 1 year and 10 months. A boy, age 12, gained 31lbs. in 1 year and 8 months. A boy, age 13, gained 25lbs. in 2 years, and another boy, age 13, gained 31lbs. in two years.

(f) *Residential Open-Air Schools.*

There are no Residential Open-Air Schools in Leicester.

Leicester Poor Boys' and Girls' Summer Camp.

The above Association sent 655 children to the sea-side at Mablethorpe for a fortnight's stay during the past year.

As usual, arrangements were made by the Education Committee for two teachers to reside near the Camp and to give instruction to the children four hours daily.

During the last year, as in previous years, I have continued to examine these children before going to Mablethorpe to ensure that they were clean and free from infectious disease.

Once again the Education Committee have had the use of these premises for two months in the Autumn, and 80 children were sent to the Camp in two batches, 39 boys and 41 girls. One of the boys was retained for two months as when he should have returned he was suffering from a dental abscess with high temperature.

The first batch of children left Leicester on September 24th, and the second batch returned on November 18th. The children were selected by the Medical Officer owing to debility and being likely to gain permanent benefit from open-air treatment. All were medically examined on more than one occasion, and the parents were interviewed before the final selection was made. Special care was taken that the children were clean and not suffering from consumption or other infectious disease.

List of schools from which the children were selected :—Belgrave Road, Bridge Road, Charnwood Street, Christ Church, Collegiate, Elbow Lane, Green Lane, Harrison Road, Hazel Street, King Richard's Road, Lansdowne Road, Linwood Lane, Mantle Road, Melbourne Road, Milton Street, Moat Road, Narborough Road, Sacred Heart, St. Mary's, St. Matthew's (Chester Street), St. Peter's (Conduit Street), St. Saviour's, and Willow Street.

The children who went last year were suffering from the following defects :—

(1) *Convalescent children suffering from the after-effects of* :—

Bronchitis	13	Asthma	1
Chorea	1	Peritonitis	1
Rheumatism	3	Pneumonia	2
Scarlet Fever	1	Operations	4
Renal	1		

(2) *Debilitated children.*

Anæmia	12	Enlarged Glands	5
Cardiac disease	2	Digestive disturbance	17
Nervous	7	Tuberculous Contacts	10

With the exception of one boy, all stayed for one month and were re-examined on their return home. This examination showed that they had improved by the change; the average increase in weight in the case of the boys was 4.47 lbs., and the girls 4.59 lbs.

Many of the children and parents made characteristic comments on the stay at Mablethorpe, such as :—"I've had a grand time"; "It has done him a world of good and I thank you ever so much"; "I've felt the best I've ever felt."

X.—PHYSICAL TRAINING.

Report of the Organisers of Physical Training.

By F. W. Briggs and Miss J. Bennett.

Interest in Physical Training continues to be well maintained. The addition of portable apparatus in the Senior Schools has proved a stimulus to both children and teachers.

Attention has been given during the year to activity and clothing. The lessons now tend more and more to become real, live active lessons, thoroughly enjoyed by the children. Great improvement has been made in regard to clothing, particularly in the Senior Schools. Whilst it is only a beginning, it is interesting to note, that in the three schools, the whole of the boys change completely for their Physical Training Lessons; in others, odd classes change. A certain amount of clothing has been supplied to schools in the poorer districts, but even here the children are providing some for themselves. Each boy has his own special pigeon-hole, in which to store his gym. kit, which is washed when necessary by his parents.

In the majority of Girls' Schools, the girls now work in knickers, with bare legs when weather conditions permit. Even working thus, it was felt that the girls were often over-clad as regards the upper part of the body, and as an experiment, singlets were supplied to a few classes. This has proved a more ideal garb, and Headmistresses testify that there has been noticeable improvement in the cleanliness both of body and underclothing.

It is felt that this saner clothing is an aid to the development in the teacher of an eye for those postural defects which otherwise are hidden by lumpy clothing.

In the junior schools, less progress has been made, but here in many cases the girls discard tunics, and work in knickers, with bare legs; the boys' classes in two schools during the hot weather wore nothing but knickers for their physical training lessons. It was interesting to see the way in which they tried to get a wash and rub down with only the limited accommodation of the school cloakroom available.

This movement is also spreading to the games' field, where nearly half the boys now change for games.

It is pleasing to note that in several girls' schools, the girls now change after games. Where facilities allow, the girls bring a towel with which to rub down, and change at least their stockings and the garments next their skin. Some schools have made a beginning with the team girls after Saturday morning matches; a few others have gone a step further, and extended it to the games' period.

Facilities for changing are, unfortunately, not always available, nor are bathing facilities. Dressing-rooms have been added to two of the grounds, and on two others, arrangements have been made so that existing buildings can be used as changing-rooms. It was also possible to arrange for the use of showers on one or two occasions. Unfortunately this could not be continued for any length of time.

Time Tables.

The time devoted to physical training is much the same as last year, i.e.:—

(*a*) *Infants.*

At least one, and in many cases two lessons daily.

(*b*) *Juniors.*

Nearly all have daily lessons.

(*c*) *Senior and Intermediate Schools.*

Two or three 30-minute lessons per week, in addition to organised games period, and swimming in the summer.

Playing Fields and Organised Games.

Arrangements continue to be such as to allow every child in the Senior and Intermediate Departments to attend a playing field for one period weekly. In addition, when there is a ground close to the school concerned, the top classes of some Junior Departments have been able to have one short period thereon.

An addition of three acres to the 86 already owned or rented by the Committee has been made by use of the school site at Barkby Lane for the games of Harrison Road School.

Dressing huts have been erected on the Evington Playing Fields and on the Barkby Lane Ground.

The floods at Whitsuntide did serious damage to the Holden Street Ground, and rendered its full use impossible for a considerable part of the year.

The following is a summary of the number of schools and children accommodated at each playing field:—

Playing Field	Acreage.	No. of schools accommodated	Weekly attendance. Boys.	Girls.	Total.
Aylestone	43	11	1113	1096	2207
Barkby Lane ...	3	2	72	474	546
Blackbird Road ...	13	4	794	88	882
Evington	16	8	696	996	1692
Holden Street ...	7	2	636	326	962
Martin St. (Wheeler)	4	6	371	518	889
St. Mary's Fields ...	3	2	65	393	458

In addition, some 1,487 boys and 876 girls have organised games lessons on the various public parks and recreation grounds.

Swimming.

During the year, arrangements have been altered, so that the Swimming year coincides with the child's first year in the Senior or Intermediate School. In all Junior Schools, land drill was practised so that the children could start swimming instruction at the baths, immediately on entering the Senior Department in September.

On a few occasions during the hot weather, Senior boys who had passed the test were taken to the open-air baths for further instruction in Life Saving.

Provision was made for the instruction of 2,207 children (1,119 boys and 1,088 girls) by the class teachers. The summary of results is as follows:—

	Boys.	Girls.	Total.
(a) Number of children who attended not less than twelve lessons	959	650	1609
(b) Number who learned to swim at least five yards, including those in (c) ...	825	629	1454
(c) Number who qualified for free swimming bath tickets (awarded by the Baths Sub-Committee) by swimming 30 yds. (boys), and 27 yds. (girls)	425	289	714

Display.

On one afternoon during the Pageant, a Physical Training display was given to some 5,000 spectators. Types of work in the different age groups were blended into one programme. The children engaged numbered 3,000; all the boys wore shorts and vest only; the girls white blouses and knickers, with bare legs.

Evening Institute.

Men.—The standard of work continues to improve, particularly in those centres from which teams are entered for the Annual Competition. The finals and semi-finals brought out some really good performances, not only in physical training but also in the athletic events. The finalists were Green Lane (winners), and Taylor Street (runners-up).

The students have themselves solved the clothing problem by appearing for their lessons in bathing costumes and shorts.

A boxing competition was also held. The number of entries was not so great as hoped, but some good boxing resulted.

Women.—A very successful competition embracing the various branches of physical training work was again held this year, the winners being Harrison Road; runners-up, Avenue Road. This aroused great interest and healthy rivalry between the Institutes.

With very few exceptions, every student now works in knickers or shorts, light top, and no stockings. Great strides have been made in this direction, when one compares the present costume with that of a few years ago. Then, those who could not afford a tunic and black stockings came most unsuitably clad for the lesson.

It is felt that the present workmanlike garb, together with the competitions, have been contributing factors to the higher attainment, and added vigour, noticeable in the majority of classes.

Games.

Teams from the various Institutes play inter-Institute matches in football and hockey. In the summer, 32 tennis courts are provided at Aylestone for the use of students, who take full advantage of them in the evenings and on Saturday afternoons.

Voluntary Associations.

The various committees of teachers which conduct the voluntary out-of-school activities have continued their good, unselfish work. Successful competitions were held in Association and Rugby Football, Cricket, Hockey, Swimming and Life Saving, and also a series of Athletic Sports culminating in the Town Sports. These meetings were in addition to the Annual Sports held by the majority of the Senior Schools. This year hockey fixtures have been arranged between a representative team of girls from Senior and Intermediate Schools, and teams of similar age from the Secondary Schools of the City.

Teachers Club.

The women teachers continue to meet weekly during the winter months for gymnastics and games, and during the summer for swimming.

Administration of the Treatment Clinics.

The regular attendance of children at the Clinics is, to a large extent, dependent upon the work of the Investigation and Clinic Officers as described in my previous Reports.

The following table is a record of the payments received from other departments, parents, etc., towards the cost of medical, orthopædic, and dental work during 1932:—

Contributions by Parents, etc.

Nature of Work.	No. of Patients treated at a fee.	£	s.	d.
Nose, Ear and Throat Clinic.				
Parents	477	327	15	0
Leicestershire County Council	377	474	4	0
Desford Boys' School ...	1	1	5	0
Maternity and Child Welfare Committee	55	39	14	0
Mental Deficiency Committee	2	2	10	0
Dental Clinic.				
Parents	7600	425	7	3
Maternity and Child Welfare Committee	139	100	4	2
Mental Deficiency Committee	77	50	8	0

X-Ray Clinic.				
Parents	8	3	5	6
Leicestershire County Council	3	3	15	0
Maternity and Child Welfare Committee	8	3	7	0
Orthopædic Clinic.				
Parents	105	78	7	9
Leicestershire County Council	101	211	16	6
Desford Boys' School ...	1	46	7	9
Maternity and Child Welfare Committee	14	24	6	0
Mental Deficiency Committee	1	1	7	0
Public Assistance Committee	3	3	16	0
Health Committee	—	262	17	9
Artificial Sunlight Clinic.				
Parents	32	7	4	9
Leicestershire County Council	2	2	0	0
Health Committee	—	616	15	0
Remedial Exercise Clinic.				
Parents—Elementary Schools	99	20	6	9
Parents — Secondary Schools	86	34	3	3
Mablethorpe Camp.				
Parents	58	37	1	6
Spectacles.				
Parents—Spectacles	137	45	6	6
Parents—Repairs ...	227	20	10	0
Desford Boys' School ...	14	7	11	6
Maternity and Child Welfare Committee ...	13	6	2	0
		£2857	14	11

It will be noticed in the above table that there is no account of fees collected for the treatment of visual defects. This is because there is an arrangement with the Leicester Public Medical Service for those children who require such treatment, and whose parents can afford to pay a small fee, to be treated at the Bond Street Dispensary. The fees vary from 3/6 to 5/-. Under these auspices, 824 children were treated during 1932, the payments being collected direct by the officers of the Public Medical Service, so that considerable addition must be made to the above figures in estimating the total amount paid by parents towards the treatment of their children.

XI.—PROVISION OF MEALS.

As in previous years, a mid-day meal has been provided for necessitous children at the Cook Memorial Hall, Archdeacon Lane.

The arrangement whereby the food is sent to the homes of children who are unable to attend the Centre on account of illness has again been in operation. The School Nurse has visited these cases to see that the grounds for the children's non-attendance at the Centre are reasonable.

During the year the total number of meals supplied was 16,714, and the actual number of children assisted under the Provision of Meals Act was 178.

During the year all children in the Infant Departments have been offered a third of a pint of pasteurised milk at the cost of 1d. per day. Each child has a separate bottle and takes the milk through a straw, and 44 per cent. of the children on the rolls avail themselves of the offer. Of those receiving milk, 79 per cent. pay for the cost and the remaining 21 per cent. have the milk free of charge after due enquiry has been made.

XII.—SCHOOL BATHS.

The baths at Overton Road and Christow Street Schools have again proved useful. The number of baths given during the year was 7,552, as compared with 7,836 in 1931.

XIII.—CO-OPERATION OF PARENTS.

Parents are invited by letter to be present during the first and intermediate medical inspections at the schools, and to accompany the children when they visit the Clinic either for inspection or treatment. At the inspection of "entrants," 77.26 per cent. of the parents attended, and at the "intermediate" inspection, 49.25 per cent. were present.

XIV.—CO-OPERATION OF TEACHERS.

The teachers forward a list of the names of all children who should be examined at each routine inspection and also a list of all special cases. They further assist by seeing that there is a regular supply of children when the examination is taking place. Many teachers also do what they can to secure the treatment of the defective child by interviewing parents and putting them in the way of obtaining treatment.

XV.—CO-OPERATION OF SCHOOL ATTENDANCE OFFICERS.

(*i*) *Medical Inspection.*

The School Attendance Officers do not take any part in the Routine Inspection at the Schools, but they play a very important part in bringing forward all children who are away from school on account of illness and arranging for their attendance at the Inspection Clinic.

(ii) Following-up.

The School Attendance Officers convey to the Head Teachers of each school department the letters addressed to the parents with regard to the defects found on inspection.

(iii) Treatment.

The Attendance Officer performs a very valuable service in following up children who are away from school suffering from chronic illness, and this ensures that such children are kept under medical treatment.

XVI.—CO-OPERATION OF VOLUNTARY BODIES.

Voluntary Bodies do not take any part in the work of Medical Inspection.

XVII.—BLIND, DEAF, DEFECTIVE AND EPILEPTIC CHILDREN.

(a) Methods employed in ascertaining the names of Special Children.

The Head Teachers and School Attendance Officers notify the Medical Officer of all cases of blindness and deafness. Children thought to be mentally deficient or epileptic are notified in accordance with the Model Arrangements, Section 31 (1) of the Mental Deficiency Act, 1913.

(b) Statement of work of each Special School during the year.

Blind.

The total number of blind children in Leicester for whom the Authority is responsible is 16, and these attend the special class for blind children in Leicester.

There are also seven men and five women receiving vocational training at the Leicester Institution for the Blind. With the exception of four persons absent on account of illness, etc., all have been thoroughly examined physically in addition to the special examination for their visual defects.

In addition to the above, one boy is receiving higher education at the Royal Normal College for the Blind, Norwood.

The two classes in Leicester for the education of blind children have continued to do useful work. There are 59 children on the rolls, 43 of whom are suffering from a high degree of myopia and are in the class for myopes. The remaining 16 are in the class for the blind.

Deaf.

There are 36 children attending the School for the Deaf in Leicester; 27 attend the classes for the totally deaf, and 9 the class for the partially deaf.

MENTALLY DEFECTIVE AND EPILEPTIC.

1. *Ineducable.*—I have excluded 4 children during the year as ineducable and these have been notified to the Local Control Authority. In addition, 3 were notified for supervision on leaving school.

2. *Feeble-minded.*—There are 75 certified mentally deficient children attending Duxbury Road School—21 have been admitted during the year and 8 withdrawn.

3. *After Care.*—Miss C. H. Baker, the After Care Officer, reports as follows :—

The work was carried on by Miss Sturman, the Assistant After Care Officer, from January until July, when she left. I was appointed to the post early in October, and took up the duties on October 17.

Sixty-eight boys and girls who have attended the Special School were visited during the months of January to July. During the remaining months of the year these young people have been under the supervision of the Mental Deficiency Committee, and have therefore not been visited by the After Care Officer.

Three hundred and eighty-nine boys and girls who left school from backward classes have been visited during the year. Of this number 326 appear to have adjusted themselves to adult social and industrial conditions quite well, and have remained fairly steadily in work. The remaining 63 have had special difficulties, either in health, behaviour, or in keeping a situation when placed in employment. These have been visited more frequently, and help or advice has been given whenever possible.

Three young people who did not leave school from backward classes have also been visited this year. These names were received through Head Teachers who felt that they were likely to have special difficulties owing to ill-health, home circumstances or temperament. Parents and guardians were found to be grateful for visits and advice.

CURATIVE SPEECH CLASSES.

Miss S. Talbot, who has been specially trained in the treatment of speech defects, reports as follows :—

During the year 1932 Speech Classes have been held twice a week at seven different schools, 152 cases have received treatment, and 65 of these are now cured. These cases are classified as follows :—

Stammering	17
Cleft Palate	9
Post-adenoid	5
Lisping	26
Lalling	8
Total cured	65

In December, 1932, weekly classes were held at The Wyggeston Boys' School and the City Boys' School. The number of severe cases of stammering in the Secondary Schools is 9 out of 21 attending, as oppposed to 39 out of 61 in the Elementary Schools. No classes were found necessary in the Girls' Secondary Schools, where no cases of severe stammering were presented.

The reports made by the Head Teachers on the children's speech in school show that children "have brightened considerably"; "can now read for a longer period"; "have rarer lapses"; "answer readily without hesitation"; while information has been received that normal speech is maintained after a year's discharge. In class experience, reading aloud often improves at once, and is the first step towards self-confidence. Attention is always concentrated on meaning instead of utterance in treatment.

Close co-operation between Schools, home, and the Centre is needed, and in order to obtain this help the Teacher makes home-visiting part of her investigation of each case. During the year, 161 visits have been made (28 in scheduled time).

Two cleft palate cases, discharged this term, have learnt to pronounce "t," "d," "k," "g," "s," "sh," "ch," and to control expiration. Their greatest difficulty was in the delicate tongue adjustment necessary for "s." They had substituted a nasal expulsion for these consonants until recently.

In regard to the general principles on which the treatment of stammering is undertaken, an investigation is first made into all related causes.

Dr. Adler ascribes the motive of stammering not to environment alone, but to the way the child apperceives that environment. He writes, "His inferiority complex diverts his striving for superiority in a useless direction."

A number of normal children stammer at some time between the ages of 2 and 11 years. The aggravation and fixation of the trouble depends on environment. "The stammer is one of the innumerable weapons that discouraged children use when they do not believe that they will succeed in the strength of their own ability."—Dr. Adler.

As Dr. Boome and Miss Richardson point out, the inferiority feeling may be emphasised in many ways:—

(*a*) by unusual stature;

(*b*) by prolonged early illness and the effort to catch up;

(*c*) by unhappy home conditions.

On the other hand, shock plays a large part in the incidence of stammering. Dr. Gillespie says that a psycho-pathological condition in the child "is more often due to a direct frustration than to unconscious conflict," and can be alleviated by a removal of this element.

Among the factors in the history of a stammer will often be found :—

(*a*) hypersensitiveness to external stimuli;

(*b*) rheumatic infection whereby the speech process is easily inco-ordinated;

(*c*) the sequelæ of some nerve-troubling illness, such as diphtheria or whooping cough.

After the case has been investigated and satisfactory relations have been set up between School, home, and Centre, the specific treatment given in the latter has a chance of success. It consists first in the practice of relaxation, both mental and physical, deliberately induced in the subject. By this means a sense of ease is substituted for a sense of effort; irritability is reduced and speech can begin again under normal conditions. No direct word-teaching is given to the stammerer, but very complete respiratory re-education, as jerky and inco-ordinated action of the diaphragm may almost be regarded as the focus of his disorder. At the same time, advantage is taken of the fact that a stammerer never hesitates in singing, and exercises in attack, sustaining and pitch variation, are employed. Confidence is restored by many devices of practical technique which need not be enumerated here; for instance, hand movement is an important factor; in many cases the hands show the same inco-ordination as the speech organs. This is improved by rhythmical hand-drill and miming. Many classes follow up a mime by asking to be allowed to speak, in order to improve their play.

XVIII.—NURSERY SCHOOLS.

The chief aim of the Nursery School is to provide a good environment, both physical and mental, for children below school age. The need for such schools is specially felt in overcrowded slum districts where the home conditions are unsuitable for rearing young children. The physical care of the young child involves provision for free movement; in the sunlight where possible, in fact an open regime is highly desirable. At present there is no school specially built for this purpose in Leicester, but with proper ventilation, suitable lavatory and cloak room accommodation, the provision of simple beds and an adequate supply of toys, much may be done to train the children in good habits. There are such classes at Belgrave Road, Belper Street, Catherine Street, Christow Street, Elbow Lane, Granby Road, Hamelin Road, Harrison Road, Hazel Street, Ingle Street, King Richard's Road, Mantle Road, Mellor Street, Milton Street, Moat Road, Shaftesbury Road, Slater Street, Syston Street, Taylor Street, and all are doing exceedingly good work. There is a general concensus of opinion among head mistresses that the children coming from a nursery class into the Infant Department at 5 years of age, are physically better and are more amenable to ordinary discipline than the child who has remained in a poor home.

XIX.—SECONDARY SCHOOLS.

In the Secondary Schools, children of the ages of 12 and 15 years were inspected, together with those in whom some noticeable defect had been observed by the teachers, also all "entrants" to the Junior Wyggeston Boys' and Girls' Schools, the Collegiate Girls' School, the Gateway School, and the Junior students at the Colleges of Art and Technology. The arrangements for the inspection and treatment of these pupils are similiar to those used in the Primary Schools. The examination takes place at the school, and the parents are invited by letter to be present. At the inspection of the boys, 58.5 per cent. of the parents attended, and 75.6 per cent. were present at the inspection of the girls. In the case of a defect being found, the parents are advised to seek medical advice without delay. At the same time an opportunity is given to the parents to sign an application form for treatment at the School Clinic in which a statement is made that they are not in a position to pay an ordinary fee. If such an application is made, the family income is duly investigated as in the case of a pupil at an Elementary School, and treatment is given either free, at a reduced fee, or is refused in accordance with the scale of charges drawn up by the Medical Service Committee.

The following is a list of the Secondary Schools provided by the Authority, together with the number of pupils in attendance:—

Alderman Newton's Boys' School	501
Alderman Newton's Girls' School	274
City Boys' School	373
Collegiate Girls' School	295
Newarke Girls' School	565
Wyggeston Boys' School	935
Wyggeston Girls' School	747
Gateway Boys' School	364
Junior Crafts Girls' School	41
Total ...	4,095

The following details of medical inspection and treatment in the Secondary Schools are given as requested by the Board of Education:—

I.—Medical Inspection.

(*a*) (*i*) All the Secondary Schools provided by the Authority are inspected annually.

(*ii*) There are no Secondary Schools in Leicester that are not provided but aided.

(*iii*) There is no medical inspection of Secondary Schools which are neither provided nor aided.

(*b*) The pupils are submitted to a full medical inspection annually. Entrants up to 10 years of age, and others at 12 years and 15 years, and all to a general survey in the intervening years.

(*c*) All pupils attending are inspected, with a few rare exceptions. A medical certificate from the pupil's own medical attendant is accepted if parents object to school inspection.

(*d*) The defective children are "followed up" by a re-inspection one month and three months after original inspection.

(*e*) All the pupils in Secondary Schools have a dental inspection by the School Dentist annually.

II.—Medical Treatment.

(*a*) All forms of treatment provided for the Primary School is provided for the Secondary School.

(*b*) Treatment is open to all pupils if their parents sign the application form stating they are unable to pay an ordinary fee.

(*c*) The arrangements for recovering the cost of treatment are the same as for the Primary School.

XX.—CONTINUATION SCHOOLS.

The junior pupils at the College of Arts and Crafts are inspected and treated as though they were attending Primary or Secondary Schools.

The number of girls examined during the year was 28, and 71.4 per cent. of the parents attended the medical inspection.

XXI.—EMPLOYMENT OF CHILDREN AND YOUNG PERSONS.

(*i*) *The co-ordination of the work of the School Medical Service with that of the Juvenile Employment Committee and of the Certifying Factory Surgeons for the district.*

The School Medical Officers, when examining the "leavers," make a report with regard to the general health and physique of each child on the Juvenile Employment Card.

There are two factory surgeons in Leicester, Dr. Binns and Dr. Lilley, both of whom are part-time medical officers to the Education Committee, and both are constantly at the Central Clinic, where all School Medical Records are kept. To these they can have access at any time. The names of children who are away from school suffering from chronic illness are placed on the Chronic Sickness Register. Arrangements are made to direct the Factory Surgeon's attention to these children shortly before they are exempt from school by reason of age.

(*ii*) *Physical Condition of Employed Children.*

Dr. Carson has undertaken the examination of these children and reports as follows:—

All school children between 12 and 14 years of age who wish to obtain employment during stated hours are medically examined before the issue of certificates under the Employment of Children Bye-Laws, and a Clinic for the examination of such children is held each Saturday morning.

Certificates granted.

The total number of children granted certificates during the past year was 726 (boys 714, girls 12), and details of the occupations desired by the applicants may be summarised as follows:—

	Boys	Girls	Total
Errands	251	6	257
Delivering Newspapers ...	450	5	455
Delivering Milk	7	—	7
Assisting in shops	3	1	4
Domestic Work	1	—	1
Surgery boys	2	—	2
	714	12	726

Certificates temporarily refused.

At the first examination 15 children were temporarily refused certificates owing to various defects. Later on certificates were granted in 12 cases. The defects, which were quickly attended to, were defective vision (1), broken or faulty spectacles (5), bad boots (3), deafness (2), and spinal curvature (1).

Certificates permanently refused.

The remaining three children were permenently refused certificates. The defects were, respectively, organic heart disease (2), and suspected phthisis (1).

Many of the children granted certificates are examined every six months and others require frequent re-examinations as round shoulders, or lateral curvature, develop very quickly in growing children. In this connection 43 re-examinations were made, and the total number of examinations during the year was 769.

XXII.—MISCELLANEOUS.

Examinations of Scholarship Candidates, Teachers, and others.

During 1932, 95 new scholars for the Secondary Schools and 188 teachers, intending teachers, domestic science students, and applicants for maintenance allowances were medically examined; 30 newly appointed officers and servants were also examined in accordance with the requirements of the Local Government and other Officers' Superannuation Act, 1922.

I am, Ladies and Gentlemen,

Your Obedient Servant,

ALLAN WARNER,

School Medical Officer.

February, 1933.

XXIII.—STATISTICAL TABLES.

ELEMENTARY SCHOOLS.

TABLE I.

Return of Medical Inspections
1st. January, 1932, to 31st. December, 1932.

A.—Routine Medical Inspections.

Number of Code Group Inspections—	
Entrants	3,605
Second Age Group	3,354
Third Age Group	3,421
Total	10,380
Number of other Routine Inspections ...	—

B.—Other Inspections.

Number of Special Inspections ...	13,532
Number of Re-inspections	27,346
Total	40,878

TABLE II.

(ELEMENTARY SCHOOLS.)

A.—RETURN OF DEFECTS FOUND BY MEDICAL INSPECTION IN THE YEAR ENDED 31ST. DECEMBER, 1932.

DEFECT OR DISEASE.		ROUTINE INSPECTIONS.		SPECIAL INSPECTIONS.	
		No. of Defects.		No. of Defects	
(1)		Requiring treatment. (2)	Requiring to be kept under observation, but *not* requiring treatment. (3)	Requiring treatment. 4)	Requiring to be kept under observation, but *not* requiring treatment. (5)
	Malnutrition	31	22	74	42
	Uncleanliness : (*see Table IV, Group V*)	—	—	—	—
SKIN	Ringworm : Scalp	1	1	95	—
	Ringworm : Body	2	—	99	—
	Scabies	1	—	48	—
	Impetigo	14	1	860	—
	Other Diseases (Non-Tuberculous)	26	2	2450	12
EYE	Blepharitis	25	11	69	17
	Conjunctivitis	7	3	124	3
	Keratitis	1	1	5	1
	Corneal Opacities	2	1	14	3
	Defective Vision (excluding Squint)	680	301	1023	209
	Squint	66	26	121	30
	Other Conditions	2	3	82	4
EAR	Defective Hearing	198	26	788	43
	Otitis Media	92	17	516	38
	Other Ear Diseases	1	—	1	—
NOSE AND THROAT	Enlarged Tonsils only	182	261	229	216
	Adenoids only	41	57	76	55
	Enlarged Tonsils and Adenoids	334	93	1198	80
	Other Conditions	28	59	176	88
ENLARGED CERVICAL GLANDS (Non-Tuberculous)		10	13	22	23
DEFECTIVE SPEECH		16	30	42	94
TEETH—Dental Diseases (*see Table IV, Group IV*)		205	—	139	2
HEART AND CIRCULATION	Heart Disease : Organic	—	77	2	110
	Heart Disease : Functional	—	44	2	75
	Anæmia	37	56	111	93
LUNGS	Bronchitis	9	39	62	58
	Other Non-Tuberculous Diseases	7	94	30	113
TUBERCULOSIS	Pulmonary :				
	Definite	1	3	20	9
	Suspected	4	58	65	73
	Non-Pulmonary :				
	Glands	1	4	3	4
	Spine	—	2	20	4
	Hip	—	2	18	5
	Other Bones and Joints	2	2	4	3
	Skin	—	1	3	1
	Other Forms	3	7	8	5
NERVOUS SYSTEM	Epilepsy	—	22	8	41
	Chorea	5	17	58	32
	Other Conditions	29	115	114	336
DEFORMITIES	Rickets	1	2	14	6
	Spinal Curvature	69	193	153	146
	Other Forms	58	65	163	121
Other Defects and Diseases (excluding Uncleanliness and Dental Disease)		89	74	308	181

TABLE II. (*continued*).

(ELEMENTARY SCHOOLS.)

B.—NUMBER OF *individual children* FOUND AT *Routine* MEDICAL INSPECTION TO REQUIRE TREATMENT (EXCLUDING UNCLEANLINESS AND DENTAL DISEASES).

Group. (1)	Number of Children.		Percentage of Children found to require treatment. (4)
	Inspected. (2)	Found to require treatment (3)	
CODE GROUPS :			
Entrants ...	3,605	501	13·8
Second Age Group	3,354	487	14·5
Third Age Group	3,421	493	14·4
Total (Code Groups)	10,380	1,481	14·2
Other Routine Inspections	—	—	—

TABLE III.

RETURN OF ALL EXCEPTIONAL CHILDREN IN THE AREA.

			Boys.	Girls.	Total.
Children suffering from the following types of Multiple Defect, *i.e.*, any combination of Total Blindness, Total Deafness, Mental Defect, Epilepsy, Active Tuberculosis, Crippling (as defined in penultimate category of the Table), or Heart Disease.					
Blind and Mentally Defective.		At Certified School for the Blind and Deaf ...	2	—	2
Mentally Defective and Blind.		At Certified School for Mentally Defective Children	1	—	1
Mentally Defective & Crippled.		At Certified School for Mentally Defective Children	—	1	1
Mentally Defective & Epileptic.		At Certified School for Mentally Defective Children	1	—	1
Blind (including partially blind).	(*i*) Suitable for training in a School for the totally blind.	At Certified Schools for the Blind	8	8	16*
		At Public Elementary Schools	—	—	—
		At other Institutions	1	—	1
		At no School or Institution	—	—	—
	(*ii*) Suitable for training in a School for the partially blind.	At Certified Schools for the Blind or Partially Blind	22	21	43*
		At Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	—	—	—
Deaf (including deaf and dumb and partially deaf).	(*i*) Suitable for training in a School for the totally deaf or deaf and dumb.	At Certified Schools for the Deaf	10	17	27*
		At Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	—	—	—
	(*ii*) Suitable for training in a School for the partially deaf.	At Certified Schools for the Deaf or Partially Deaf	4	5	9
		At Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	—	—	—

* Included in these numbers are—

1 boy and 1 girl from other Authorities attending the School for the Blind.
4 boys and 2 girls from other Authorities attending the School for the Partially Blind.
4 boys and 6 girls from other Authorities attending the School for the Deaf.

TABLE III *(continued)*.

			Boys.	Girls.	Total.
Mentally Defective.	Feebleminded.	At Certified Schools for Mentally Defective Children	46	29	75†
		At Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	—	—	—
	Notified to the Local Mental Deficiency Authority *during the year.*	1. (*i*) Children incapable of receiving benefit or further benefit from instruction in a Special School—			
		(*a*) Idiots	—	—	—
		(*b*) Imbeciles	3	1	4
		(*c*) Others	—	—	—
		(*ii*) Children unable to be instructed in a Special School without detriment to the interests of other children—			
		(*a*) Moral defectives ...	—	—	—
		(*b*) Others	—	—	—
		2. Feebleminded children notified on leaving a Special School on or before attaining the age of 16	2	1	3
		3. Feebleminded children notified under Article 3 *i.e.* "special circumstances" cases ..	—	—	—
		4. Children who in addition to being mentally defective were blind or deaf	—	—	—
Epileptics.	Suffering from severe epilepsy.	At Certified Schools for Epileptics	1	—	1
		At Certified Residential Open Air Schools ...	—	—	—
		At Certified Day Open Air Schools	—	—	—
		At Public Elementary Schools	12	8	20*
		At other Institutions	—	—	—
		At no School or Institution	7	1	8
	Suffering from epilepsy which is not severe.	At Public Elementary School	12	6	18
		At no School or Institution	2	3	5

† Included in these numbers are 2 boys and 3 girls from other Authorities attending Duxbury Road Special School.

* Major attacks but not frequent.

TABLE III *(continued)*.

			Boys.	Girls.	Total.
Physically Defective.	Active pulmonary tuberculosis (including pleura and intrathoracic glands).	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board ...	—	1	1
		At Certified Residential Open Air Schools ...	—	—	—
		At Certified Day Open Air Schools ...	—	—	—
		At Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	7	1	8
	Quiescent or arrested pulmonary tuberculosis (including pleura and intrathoracic glands).	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board ...	—	—	—
		At Certified Residential Open Air Schools ...	—	—	—
		At Certified Day Open Air Schools ...	—	—	—
		At Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	—	—	—
	Tuberculosis of the peripheral glands	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board ...	—	—	—
		At Certified Residential Open Air Schools ...	—	—	—
		At Certified Day Open Air Schools ...	—	—	—
		At Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	1	—	1
	Abdominal tuberculosis.	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board ...	—	—	—
		At Certified Residential Open Air Schools ...	—	—	—
		At Certified Day Open Air Schools ...	—	—	—
		At Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	—	—	—
	Tuberculosis of bones and joints (not including deformities due to old tuberculosis).	At Sanatoria or Hospital Schools approved by the Ministry of Health or the Board	12	7	19
		At Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	—	—	—

TABLE III (*continued*).

			Boys.	Girls.	Total.
Physically Defective (*continued*)	Tuberculosis of other organs (skin, etc.).	At Sanatoria or Hospital Schools approved by the Ministry of Health or the Board	—	—	—
		At Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	—	—	—
	Delicate Children, *i.e.*, all children (except those included in other groups) whose general health renders it desirable that they should be specially selected for admission to an Open Air School.	At Certified Residential Cripple Schools ...	—	—	—
		At Certified Day Cripple Schools	—	—	—
		At Certified Residential Open Air Schools ...	—	—	—
		At Certified Day Open Air Schools	85	93	178
		At Public Elementary Schools	38	40	78 *a*
		At other Institutions	—	—	—
		At no School or Institution	14	14	28
	Crippled Children (other than those with active tuberculous disease) who are suffering from a degree of crippling sufficiently severe to interfere materially with a child's normal mode of life.	At Certified Hospital Schools	—	—	—
		At Certified Residential Cripple Schools ...	—	—	—
		At Certified Day Cripple Schools	—	—	—
		At Certified Residential Open Air Schools ...	—	—	—
		At Certified Day Open Air Schools	—	—	—
		At Public Elementary Schools	164	122	286 *b*
		At other Institutions	—	—	—
		At no School or Institution	13 (1)	24 (1)	37 *c*
	Children with heart disease, *i.e.*, children whose defect is so severe as to necessitate the provision of educational facilities other than those of the public elementary school.	At Certified Hospital Schools	—	—	—
		At Certified Residential Cripple Schools ...	—	—	—
		At Certified Day Cripple Schools	—	—	—
		At Certified Residential Open Air Schools ...	—	—	—
		At Certified Day Open Air Schools	—	—	—
		At Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	1	2	3

a Of this number 23 boys and 22 girls are attending Hinckley Road Open Air Class.
b Of this number 2 boys and 3 girls are attending Hinckley Road Open Air Class.
c Number (in brackets) of children who should be receiving Special School education.

TABLE IV.

Return of Defects treated during the Year ended 31st. December, 1932.

(ELEMENTARY SCHOOLS.)

Treatment Table.

Group I.—Minor Ailments

(excluding Uncleanliness, for which see Group V).

Disease or Defect. (1)	Number of Defects treated, or under treatment during the year. Under the Authority's Scheme. (2)	Otherwise. (3)	Total. (4)
Skin—			
Ringworm-Scalp	85†	11	96
Ringworm-Body	84	16	100
Scabies	21	26	47
Impetigo	836	34	870
Other skin disease	414	131	545
Minor Eye Defects— (External and other, but excluding cases falling in Group II.)	193	29	222
Minor Ear Defects	1,435*	46	1,481
Miscellaneous— (*e.g.* minor injuries, bruises, sores, chilblains, etc.).	1,752	168	1,920
Total ...	4,820	461	5,281

* Of this number 928 children were remedied by operative treatment of the nose and throat, and are also included in Group III. Mastoid operations (5) are excluded from this table.

† This number includes 3 County (X-Ray) cases.

TABLE IV. *(continued).*

(ELEMENTARY SCHOOLS.)

Group II.—Defective Vision and Squint

(excluding Minor Eye Defects treated as Minor Ailments—Group I.).

Defect or Disease. (1)	Number of Defects dealt with.			
	Under the Authority's Scheme. (2)	Submitted to refraction by private practitioner or at hospital, apart from the Authority's Scheme. (3)	Otherwise. (4)	Total. (5)
Errors of Refraction (including Squint) ...	1,268	105	59	1 432
Other Defect or Disease of the Eyes (excluding those recorded in Group I.) ...	64	13	—	77
Total ...	1,332	118	59	1,509

Total number of children for whom spectacles were prescribed

(*a*) Under the Authority's Scheme 922

(*b*) Otherwise 392*

Total number of children who obtained or received spectacles

(*a*) Under the Authority's Scheme { (i) Clinic prescriptions 537

(ii) Other prescriptions 350

(*b*) Otherwise 392*

* A number of children obtained glasses in 1932, although not inspected by the Authority's Medical Officer during that year.

Group III.—Treatment of Defects of Nose and Throat.

Number of Defects.				
Received Operative Treatment.			Received other forms of Treatment. (4)	Total number treated. (5)
Under the Authority's Scheme, in Clinic or Hospital. (1)	By Private Practitioner or Hospital, apart from the Authority's Scheme. (2)	Total. (3)		
† 1,268*	‡ 9	1,277	353	1,630

	Tonsils	Adenoids.	T. & A.	Other.
†	—	43	1219	6
‡	1	—	8	—

* This number includes 377 County cases.

Group IV.—Dental Defects.

(ELEMENTARY SCHOOLS.)

(1) Number of Children who were :—

(a) Inspected by the Dentist :—

	Aged :		
Routine Age Groups	5	2500	Total 24,772
	6	2669	
	7	2676	
	8	2702	
	9	3029	
	10	2919	
	11	3099	
	12	3227	
	13	1793	
	14	158	

Specials 1,501

Grand Total 26,273†

(b) Found to require treatment ...15,426

(c) Actually treated at the Clinic ... 8,176

(d) Re-treated during the year as the result of periodical examination 4,732

(2) Half-days devoted to	Inspection ... 203 Treatment ... 1,631	Total ...	1,834
(3) Attendances made by children for treatment		...	11,822*
(4) Fillings	Permanent teeth ‡4,041 Temporary teeth 224	Total ...	4,265
(5) Extractions	Permanent teeth §2,745 Temporary teeth 15,364	Total ...	18,109
(6) Administrations of general anæsthetics for extractions	Local ... 8,901 Gas ... 19	Total ...	8,920
(7) Other operations	Permanent teeth Temporary teeth 545 *Orthodontic Cases* 39 *Crowns* ... 1 *Dentures* ... 1 *Obturators* ... 2 *Scalings* ... 92 *Howe's Treatment* 174 — 309	Total ...	854

† In addition to this number, 2,125 children were inspected a second time during the year.

* In addition, 82 children attended at the Clinic for re-inspection, but were found not to require treatment.

‡ Including 75 root fillings.

§ Including 202 regulations.

Group V.—Uncleanliness and verminous conditions.

(i) Average number of visits per school made during the year by the School Nurses	17
(ii) Total number of examinations of children in the schools by School Nurses	86,873
(iii) Number of individual children found unclean ...	1,112
(iv) Number of children cleansed under arrangements made by the Local Education Authority	—
(v) Number of cases in which legal proceedings were taken :	
(a) Under the Education Act, 1921 ...	—
(b) Under School Attendance Bye-Laws ...	—

XXIV.—STATISTICAL TABLES.

SECONDARY SCHOOLS.

TABLE I.

Return of Medical Inspections
1st. January, 1932, to 31st. December, 1932.

A.—Routine Medical Inspection.

Number of Code Group Inspections—

Age	4	5	6	7	8	9	10	11	12	13	14	15	16	over 16	Total
Boys	1	5	2	3	23	20	12	137	191	12	95	152	14	8	675
Girls	3	19	13	7	17	21	37	245	266	20	123	95	1	2	869
Total	4	24	15	10	40	41	49	382	457	32	218	247	15	10	1,544

Number of other Routine Inspections ... —

B.—Other Inspections.

Number of Special Inspections	798
Number of Re-inspections	1,189
Total	1,987

TABLE II.

(SECONDARY SCHOOLS.)

A.—RETURN OF DEFECTS FOUND BY MEDICAL INSPECTION IN THE YEAR ENDED 31ST. DECEMBER, 1932.

DEFECT OR DISEASE. (1)		ROUTINE INSPECTIONS. No. of Defects. Requiring treatment. (2)	ROUTINE INSPECTIONS. No. of Defects. Requiring to be kept under observation, but *not* requiring treatment (3)	SPECIAL INSPECTIONS. No. of Defects. Requiring treatment. (4)	SPECIAL INSPECTIONS. No. of Defects. Requiring to be kept under observation, but *not* requiring treatment. (5)
	Malnutrition	1	6	—	8
	Uncleanliness *(see Table IV, Group V)*	—	—	—	—
SKIN ...	Ringworm : Scalp	—	—	1	—
	Ringworm : Body	—	—	2	—
	Scabies	—	—	1	—
	Impetigo	—	—	—	—
	Other Diseases (Non-Tuberculous)	1	—	15	—
EYE ..	Blepharitis	2	3	—	2
	Conjunctivitis	—	—	2	—
	Keratitis	—	—	—	—
	Corneal Opacities	—	—	—	—
	Defective Vision (excluding Squint)	188	41	181	16
	Squint	—	—	1	—
	Other Conditions	1	—	1	1
EAR ...	Defective Hearing	9	2	12	2
	Otitis Media	3	1	5	1
	Other Ear Diseases ...	—	—	—	—
NOSE AND THROAT ...	Enlarged Tonsils only ...	15	20	15	13
	Adenoids only	1	1	4	2
	Enlarged Tonsils and Adenoids	6	2	27	2
	Other Conditions	5	3	9	4
ENLARGED CERVICAL GLANDS (Non-Tuberculous)		5	3	2	1
DEFECTIVE SPEECH		2	3	3	4
TEETH—Dental Diseases *(see Table IV, Group IV)*		49	—	27	1
HEART AND CIRCULATION	Heart Disease : Organic ...	—	10	1	16
	Heart Disease : Functional ...	—	12	—	13
	Anæmia	2	3	1	3
LUNGS ...	Bronchitis	1	3	—	2
	Other Non-Tuberculous Diseases	2	6	1	5
TUBERCULOSIS ...	Pulmonary :				
	Definite	—	—	—	1
	Suspected	—	—	—	1
	Non-Pulmonary :				
	Glands	1	1	—	—
	Spine	—	—	—	—
	Hip	1	—	—	—
	Other Bones and Joints ..	—	—	—	—
	Skin	—	—	—	—
	Other Forms... ...	—	—	—	—
NERVOUS SYSTEM ...	Epilepsy	—	—	—	3
	Chorea	—	—	1	1
	Other Conditions	1	6	6	9
DEFORMITIES	Rickets	—	—	—	—
	Spinal Curvature	26	81	59	58
	Other forms	65	51	80	46
Other Defects and Diseases (excluding Uncleanliness and Dental Defects)		8	25	9	17

TABLE II. *(continued)*.

(SECONDARY SCHOOLS.)

B.—Number of *individual children* found at *Routine* Medical Inspection to Require Treatment (excluding Uncleanliness and Dental Diseases).

Number of Children—	
Inspected	1,544
Found to require Treatment	275
Percentage of Children found to require Treatment	17·8

TABLE IV.

Return of Defects treated during the Year ended 31st. December, 1932.

(SECONDARY SCHOOLS.)

Treatment Table.

Group I.—Minor Ailments.

Disease or Defect.	Number of Defects treated, or under treatment during the year.		
	Under the Authority's Scheme.	Otherwise.	Total.
(1)	(2)	(3)	(4)
Skin—			
Ringworm-Scalp	1	—	1
Ringworm-Body	2	—	2
Scabies	1	—	1
Impetigo	—	—	—
Other skin disease	1	2	3
Minor Eye Defects— (External and other, but excluding cases falling in Group II.)	1	3	4
Minor Ear Defects	16	9	25
Miscellaneous— (e.g. minor injuries, bruises, sores, chilblains, etc.). ...	9	1	10
Total ...	31	15	46

TABLE IV. *(continued).*

(SECONDARY SCHOOLS.)

Group II.—Defective Vision and Squint

(excluding Minor Eye Defects treated as Minor Ailments—Group I.).

Defect or Disease. (1)	Number of Defects dealt with. Under the Authority's Scheme. (2)	Submitted to refraction by private practitioner or at hospital, apart from the Authority's Scheme. (3)	Otherwise. (4)	Total. (5)
Errors of Refraction (including Squint) ...	167	67	37	271
Other Defect or Disease of the Eyes (excluding those recorded in Group I.) ...	1	—	—	1
Total ...	168	67	37	272

Total number of children for whom spectacles were prescribed

(*a*) Under the Authority's Scheme	113
(*b*) Otherwise	133*

Total number of children who obtained or received spectacles

(*a*) Under the Authority's Scheme	(i) Clinic prescriptions	17
	(ii) Other prescriptions	95
(*b*) Otherwise		133*

* A number of children obtained glasses in 1932, although not inspected by the Authority's Medical Officer during that year.

Group III.—Treatment of Defects of Nose and Throat.

Number of Defects.

Received Operative Treatment: Under the Authority's Scheme, in Clinic or Hospital. (1)	Received Operative Treatment: By Private Practitioner or Hospital, apart from the Authority's Scheme. (2)	Received Operative Treatment: Total. (3)	Received other forms of Treatment. (4)	Total number treated. (5)
† 23	‡ 5	28	17	45

	Tonsils.	Adenoids.	T. & A.	Other.
†	—	1	22	—
‡	1	—	4	—

Group IV.—Dental Defects.

(SECONDARY SCHOOLS.)

(1) Number of Children who were :—

(*a*) Inspected by the Dentist :—

	Aged :		
Routine Age Groups	5...	—	Total 3,093
	6 ..	29	
	7...	44	
	8...	57	
	9...	109	
	10...	144	
	11...	378	
	12...	714	
	13...	504	
	14...	442	
	15...	415	
	16...	257	
Specials		...	169
		Grand Total	3,262

(*b*) Found to require treatment ...	... 1,749
Referred back to own Dentist	... 465
(*c*) Actually treated at the Clinic	.. 449
(*d*) Re-treated during year as the result of periodical examination ...	... 337

(2) Half-days devoted to	Inspection ... 52 Treatment *1,631	Total ...	1,683
(3) Attendances made by children for treatment		.	†820
(4) Fillings	Permanent teeth ‡746 Temporary teeth 69	Total ...	815
(5) Extractions	Permanent teeth §248 Temporary teeth 134	Total ...	382
(6) Administrations of general anæsthetics for extractions	Local ... 281 Gas ... 2	Total ...	283
(7) Other operations	Permanent teeth Temporary teeth } 112 *Orthodontic Cases 11* *Crowns ... 1* *Scalings ... 27* *Howe's Treatment 1* } 40	Total ...	152

* No special sessions are devoted to the treatment of Secondary School children, therefore this figure is common to both Primary and Secondary Schools.

† In addition, 6 children attended the Clinic for re-inspection but were found not to require treatment.

‡ Including 10 root fillings.

§ Including 27 regulations.

APPENDIX A.

TRAINING CHILDREN IN CORRECT POSTURE.*

By Allan Warner, M.D., D.P.H.

Introduction.

Our daily greeting of "How do you do" when coupled with its French equivalent "How do you carry yourself" suggests that there is a reciprocal connection between good health and good carriage.

It is clear that this opinion has been widely accepted for many years, for in 1823, Dr. Buchan writing in his treatise on medicine said :—

> "A bending posture obstructs all the vital motions, and of course, must destroy the health. Sedentary artificers ought to stand or sit as erect as the nature of their employment will permit. They should likewise change their position frequently and should never sit too long at a time but leave off work; walk, ride and run."

This statement, although more than a hundred years old, is perfectly true to-day and it would be difficult to improve on the simple advice that is given. However, modern physiologists have shown why incorrect posture is the cause of ill-health and further, have proved that if proper posture be maintained by conscious effort for a short time, then the increase of reflex tonus obtained by such posture will serve to maintain the proper attitude without the person requiring to give the matter thought and attention. Good carriage then, does not alone depend on a conscious effort of strong muscular contraction, but rather upon a varying tension or tone of the muscles brought about by reflex action. It is dependent on correct habit, for there is a habit of movement as there is a habit of mind. By habit, we mean that a movement or thought has been repeated over and over again until it has become automatic, i.e., the lower nerve centres have by practice been impressed by a memory picture of what has been required of them and they are then able to carry out the movement or thought without the attention of the higher centres. This being the case, it is obvious that the form or style of movement from the beginning should be correct, otherwise the frequent repetition of the same faulty method will give a false impression which will be perpetuated; for the lower centres do not exercise any judgment of perfect form themselves.

On the other hand, if good form is insisted on at first, the perfect form will remain permanent and bad habits will not have to be broken later on. Since many habits are well established before the child comes to school, it is extremely important that parents and teachers in the home as well as the teachers in the school should train children in correct posture from an early age, that they may obtain permanent control of the body in all situations of life. To fully appreciate the value and importance of such training and to prepare one to give suitable instruction, it is necessary to be acquainted with certain elementary physiological facts with regard to muscles and nerves.

---

* *Lecture given to the Leicester Education Study Society,* 1932.

Muscle Activity.

It is now believed that human posture depends upon the co-ordination of the muscles acting on the skeleton. This being so, it may be well, in the first place, to consider the underlying mechanism of the different types of muscular activity.

Muscles may be divided into voluntary and involuntary. The former are contracted by an expression of the will; the latter are the muscles found everywhere in the body where movement takes place independently of the will, as in the walls of the blood vessels and digestive tract. The voluntary muscles are brought into action through the cerebro-spinal nervous system, and the involuntary muscles through the sympathetic nervous system. One important characteristic of all muscle is its power to contract. Voluntary muscles shorten more than one-third of their length during contraction. On examining such a muscle it is seen to be composed of a large number of separate bundles and each of these bundles is made up of an indefinite number of long fibres. Under the microscope it may be seen that each of these fibres is equipped with an efferent nerve and is able to contract independently. Every stimulation of a fibre by the nerves takes place according to the law "all or none," so that if more force is required more fibres must be employed. In any action which has been frequently practised, only as many fibres are stimulated as are needed for the accomplishment of the required effort. The other fibres of the muscle are passively carried along by the actively contracting fibres. The question naturally arises, what is the source of the energy that causes the movement. It is now known that it is the carbohydrate deposit; the glycogen present in the muscle that undergoes a chemical change as a result of nerve stimulus. Most of the carbohydrate taken as food is stored in the liver as sugar (glycogen), but a comparatively small amount is deposited in the muscles for immediate purposes. Any further supply, through the sympathetic nervous system, is automatically released from the liver as required. During muscular action, the amount of glycogen in the muscle is reduced and acids are produced, particularly lactic acid. Chemically, the lactic acid molecule is one half a sugar molecule. When a muscle contracts, the chemical action is in two phases. The first takes place in the absence of oxygen, the glycogen molecule being split into two lactic acid molecules and considerable heat is evolved. No definite knowledge exists as to how lactic acid produces muscular contraction. It may act in some way on the surface of the muscle fibres, which then change because of surface tension. The second phase takes place in the presence of oxygen during the rest period following muscular contraction. One-fifth of the lactic acid resulting from the above action undergoes combustion, i.e., it combines with oxygen and forms water and carbon dioxide, and evolves heat. The remaining four-fifths are re-converted into glycogen: the heat needed for this last change being obtained from the heat produced by changing the one-fifth of the lactic acid into water and carbon dioxide. As long as the necessary oxygen is present for the oxidation of the one-fifth lactic acid, the described process must occur without interruption, but as soon as the quantity of oxygen is insufficient, a portion of the developed lactic acid remains which cannot be transformed. This is what we mean when we speak of an accumulation of fatigue material.

It is clear then, that all serious muscular effort demands more glycogen, more oxygen, and the elimination of carbon dioxide and water. In other words, it must affect the general metabolism of the body, there must be increased respiration, circulation and digestion. Taking increased respiration as an example, an adult sitting still inspires about ½ litre of air at each breath and breathes about 15 times per minute. By calculation we find that approximately 10,000 litres of air pass into the lungs during 24 hours. But a person strolling about ventilates his lungs 2½ times as much, in quick walking 4 times as much, or mountain climbing 6 times more than when in a sedentary position. Thus a person walking 12 miles in the morning and another 12 miles in the afternoon would inspire 20,000 litres of air as compared with the 10,000 if he remained at sedentary work all day.

It is well known that the life of sedentary workers is lacking in vigour, and may be compared to a smouldering fire. If such an individual compensates for his inactivity whilst at work by regular exercise or sport, he will stir the fire of life to a blaze and will render himself more vigorous and of greater vital capacity. We see then, that physical exercises such as walking, riding and running in the open air are essential for maximum growth and vigour. They not only increase muscular tone, which is important, but also increase mental and physical vigour which are invaluable in the maintenance of good posture.

Muscle Tone.

The muscular movements described above go on with chemical changes which can be measured, but there is another form of contraction called tonus which is kept up without obvious loss of energy. Every muscle is in a certain condition of contraction even at rest. This is easily proved to be the case for when the muscle is cut through, the muscle shortens itself at once. This tonus is kept up by a reflex which develops through the muscle beginning to relax. The sensory nerves in a muscle report the beginning of lengthening to the brain or spinal cord and cause at once the slight contraction.

Muscular tone is generally considered to be composed of two elements :—

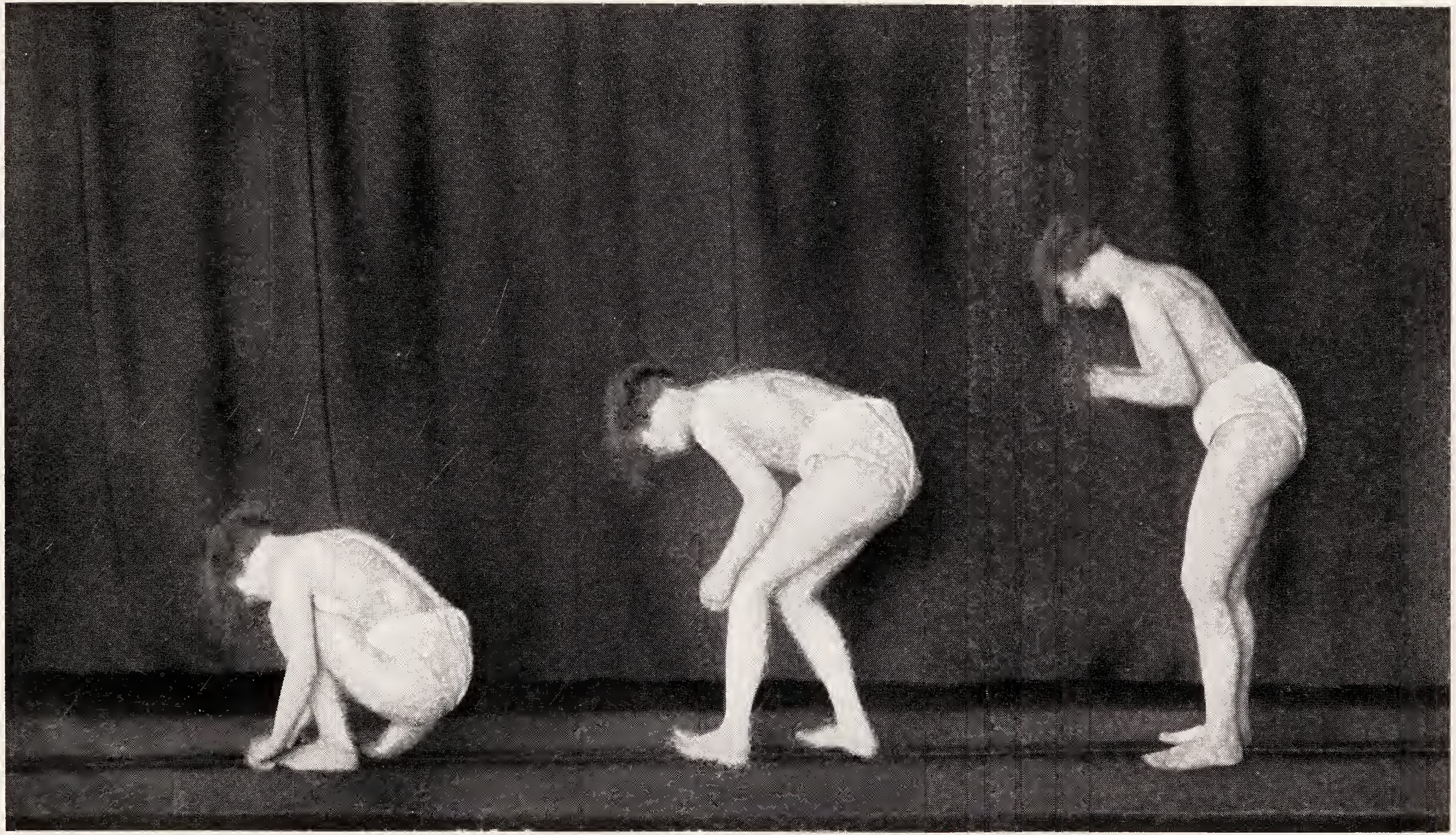
(1) Contractile tonus depending upon cerebro-spinal innervation.

(2) Plastic tonus depending upon the sympathetic system.

Contractile tone acts in certain muscles only, while their antagonists are reflexly inhibited; this element of tone, therefore, imposes a posture on the part. Plastic tone tends to fix this posture, once assumed, by maintaining the length of the fibres of the muscles which inhibit contractile tone. Tone is always a reflex act but it is carried out under the control of the higher centres. If this control is released, as is the case where there is disease or injury of the brain, the affected muscles exhibit a state of over-tone or spasm. But perhaps the difference in action of contractile and plastic tone is best understood by considering the symptoms which follow certain organic diseases that interfere with these two mechanisms.

PLATE I.

Rigidity following Encephalitis Lethargica.



(c) Proceeding on "all fours."   (b) Walking one step forward.   (a) Standing as erect as possible.

(1) Both contractile and plastic tone are increased where there has been injury to the motor centres in the brain or the motor paths leading from those centres called the pyramidal tract. This gives rise to spasm of the muscles affected, and at times to complete rigidity of the limb, contractures, and possibly permanent deformity, unrelieved by medicine. This condition is accompanied by increased reflexes and owing to the spasm is known as spastic paralysis.

(2) Plastic tone, apart from contractile tone, is increased in certain other diseases such as paralysis agitans or encephalitis lethargica (sleepy sickness) in which the extra-pyramidal tract is involved. The spasm in these cases gives rise to marked rigidity but most voluntary actions can take place though the patient is extremely slow to move and adjustments of the centre of gravity are not quickly made. This condition is often associated with tremor and the reflexes remain unaltered. The spasm in these cases may be greatly relieved by medicine for we know of many drugs that influence the action of the sympathetic system. I have a number of such patients under my care at present who would be extremely reluctant to forego their medicine.

The following case may be used as an illustration of this type. The patient, represented in Plate I., had an attack of ''sleepy sickness'' some years ago which was followed by immobility of the face, general rigidity and characteristic gait. Later, she gave up walking on two legs and proceeded on ''all-fours.'' Some idea of this patient's condition before medical treatment may be obtained by reference to Plate I. In Plate I. (*a*) the patient has been asked to stand up as erect as possible and walk into another room. She rose very slowly, gradually overcoming the antagonistic muscles which are set by plastic tone. The patient is seen in a characteristic attitude, stooping, with head and trunk bent forward, arms flexed and pronated, knees slightly bent; she is standing as erect as she can and any attempt to push her shoulders further back causes her to walk backward. In Plate I. (*b*), she is seen taking one step forward, slowly lowering head and trunk until she is in a position seen in Plate I. (*c*), and then she proceeded on ''all-fours'' into the other room. She had no paralysis and no atrophy as may be seen in the photograph. Subsequently she was given full doses of a drug known as stramonium and her general condition improved. Much of the rigidity was lost and she is now able to walk in the ordinary way with reasonable comfort.

Sir Charles Sherrington, in his work on postural tone found that constant slight contraction of the muscles, which is reflex and not conscious in its action, is confined to the muscles that maintain the erect attitude. He also says that the posture of the head has the greatest influence in the attitude of the rest of the body and if proper posture be maintained by voluntary effort for a short time it will develop an increased reflex tonus. We see then, that the tone of the muscle is of importance because it can apparently be changed within certain limits by practice. This means that through practice we can achieve better posture without an increased use of energy.

The Mechanics of the Child's Body.

To attain good carriage and symmetrical development it is essential that parents should realise that the infant is not a facsimile of the adult in miniature. The infant differs in the external proportions, in the functions of its organs and in its chemical make-up. Special regard must be paid to the fact that there is a large proportion of cartilage and fibrous tissue in the child's skeleton in the place of bone. This renders the skeleton soft and liable to deformity when subjected to undue pressure. The disease known as rickets, where the bones are particularly soft, often gives rise to knock-knees, bow legs and other deformities. Similarly, the constant assumption of wrong postures, such as occur when the infant is habitually carried in one position or where a child assumes a faulty posture at school, either by bending over the desk or twisting the spine whilst seated at the desk or by dropping a hip when standing, lead to curvature of the spine. At birth, the child's spine is so flexible that it can be easily twisted in any direction. This flexibility is due to almost the whole of the spinal column being cartilaginous (gristle). It is not accurately known when the vertebræ become completely ossified but probably not until the end of the 7th year. A noticeable thing about the infant at birth is that the curve of the spine presents one smooth concavity forwards, whilst in the adult there is a convexity at the neck, concavity at the back and convexity in the lumbar region. The production of these curves as the child grows older is due to the pull of the muscles, as well as to the action of gravity when the child begins to walk. The curves in the spine protect the growing child from injury by minimising the shock transmitted from the feet to the head, as in jumping. The tonicity of the muscles play an important part in retaining the curves of the spine and with limiting its movements. So great is the effect of the muscles that the undue pull of a muscle may produce a permanent deformity. The action of the muscle should therefore be symmetrical on both sides. Another most noticeable thing is that an infant's head is relatively much larger than that of an adult, consequently the child looks top heavy. This appearance is proved to be true, for the centre of gravity of the infant is situated higher than in the adult on account of the relatively large size of the head and liver. This condition places the child at a disadvantage in maintaining the erect posture, for the stability of standing depends on (1) the position of the centre of gravity relative to the basis of the support; which is formed by the area enclosed by the two feet. So long as the vertical plane through the centre of gravity falls within this base, the body remains in the erect posture. Hence, a person carrying a pail of water, say in the right hand, leans over to the left because the centre of gravity has moved to the right and generally speaking he will prefer to carry a pail in each hand; thus saving a rather complex adjustment demanding mental attention. (2) The height of the centre of gravity above the base of the support. Stability of the body not only depends on the width of the base but also varies inversely as the height of the centre above the base. (3) Stability varies directly with the weight of the body. Hence in children the erect posture is very unstable because (i) the weight of the body is small, (ii) the feet which form the base are small, (iii) the height of centre of gravity is high, (iv) co-ordination of muscles to restore equilibrium is absent.

It will be noticed that a baby beginning to walk bends the knee and stands with feet wide apart, thus lowering the centre of gravity and increasing the size of the base. The erect posture is maintained by the balanced action of the antagonistic groups of muscles of the trunk and lower limbs which keep the centre of gravity vertically above the basis of support. This muscular equipoise is secured by the co-ordinating action of the nervous system, such action being absent in the child until about a year old.

During the first few weeks of life the child's body often assumes the attitude it had assumed before birth, that is to say, the head is bent forward on the chest, the arms and legs are flexed at every joint and the feet are directed towards each other. This preponderating action of flexors over extensors tends to remain throughout life.

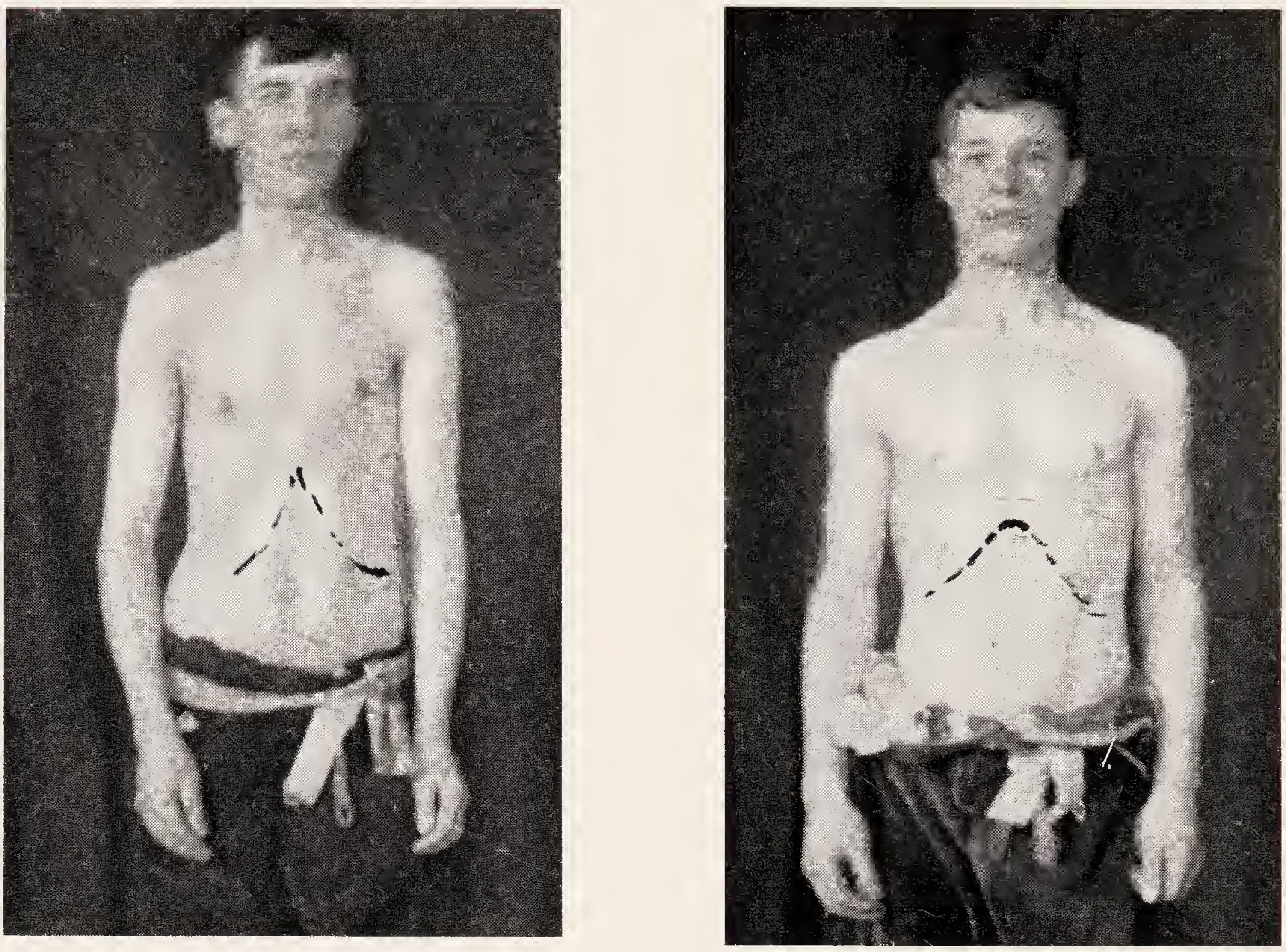
The infant, for the first month or two, is unable to hold its head up by its own muscular activity, hence in carrying an infant the child's head should be supported by the mother's upper arm and on no account should the child be carried erect, or sat up, until the muscles in the back and neck have been developed and the co-ordinating nervous action is secured. Most infants can hold the head up at the end of three months and can sit up alone at six months, can stand at nine or ten months and begin to walk about twelve months. Failure to reach these milestones at the normal time leads one to suspect some deficiency in mental ability. But there should be no attempt to make children do these things prematurely, especially if there is any likelihood of even slight rickets, from fear of causing spinal deformities later on. However, an infant can be assisted to develop its muscles by allowing it to lie on its abdomen. In this position, the desire to see things around it makes it raise and turn its head, thus developing the muscles of the neck. The next step taken is to raise its body and support itself on its arms; strengthening the muscles of the spine, chest and back. Then the child soon makes attempts at crawling, strengthening the abdominal and leg muscles and preparing the way for standing and walking. After the child has learnt to crawl it makes attempts to stand, helping itself up by the furniture. By this time, the walking muscles and bones have become stronger and the nervous paths between the higher centres and the muscles have become established so that the child with a little help is able to walk a few steps. In the course of time, by frequent repetition the act becomes semi-automatic and he is able to accomplish ordinary walking without thinking what he is doing. The length of step depends upon the length of the limb, hence the step is shorter than in the adult; on the average, the step of a child of four years is only half the length of that of an adult. Mothers should bear this fact in mind when walking quickly with small children. The width of the stride is approximately the same in a child as in an adult: it walks therefore on a relatively broader basis. On the other hand, the angle which the long axis of the foot makes with the direction of locomotion is more acute in the infant. Indeed, sometimes the feet are actually directed inwards.

This should not be corrected. The foot in walking, even in the adult, should go straight forward and should not be turned out as is frequently taught, for eversion is one of the causes of flat feet. The weight of the body in standing or walking is borne by the arch of the foot. It is often said that an infant's foot is naturally flat but this is more apparent than real. Infants have a well developed pad of fat which obliterates the arch. Still, when a child begins to walk he places his feet flat on the ground widely apart with the weight chiefly on the inner side, the toes are spread out and the child walks flat footed without any spring. As the child gradually brings the feet more together, the weight is thrown on the outer border of the foot. This generally takes a few months but some children continue to walk with the feet apart and the weight on the inner border; there is then a tendency for a mild degree of knock knees to develop. Under these circumstances, an Orthopaedic Surgeon should be consulted who will probably remedy the trouble by adjusting the shoes and giving advice. As a rule, children under 14 do not complain of their feet but at a later date come forward with foot strain and confirmed flat foot, consequently it is all the more important for parents to pay attention to this matter when the child is young. These conditions are mainly due to two causes, bad bodily mechanics in standing and walking and improper shoeing. When walking, the toes should point forward, the foot being in such relation to the leg that the line of weight passing downwards through the centre of the knee and ankle is continued over the second toe. Correct shoes should be sufficiently long to allow the big toe clearance when standing. The inner side of the shoe should be straight and have the point opposite the big toe. The heel should be low and broad. It is incredible that in the 20th Century, for the sake of following fashion there should be such a large demand for wedge shaped shoes. In the case of women's shoes their heels are too high and the base too narrow, tending to force the toes into the thin end of the wedge. Failure to pay regard to this simple matter often leads to life-long discomfort and may prevent the individual following certain occupations. In some of the great hospitals, all probationers have a special examination of the feet and about 65 per cent. of those examined require advice for some form of foot strain.

Faulty Posture as a Cause of Ill-Health.

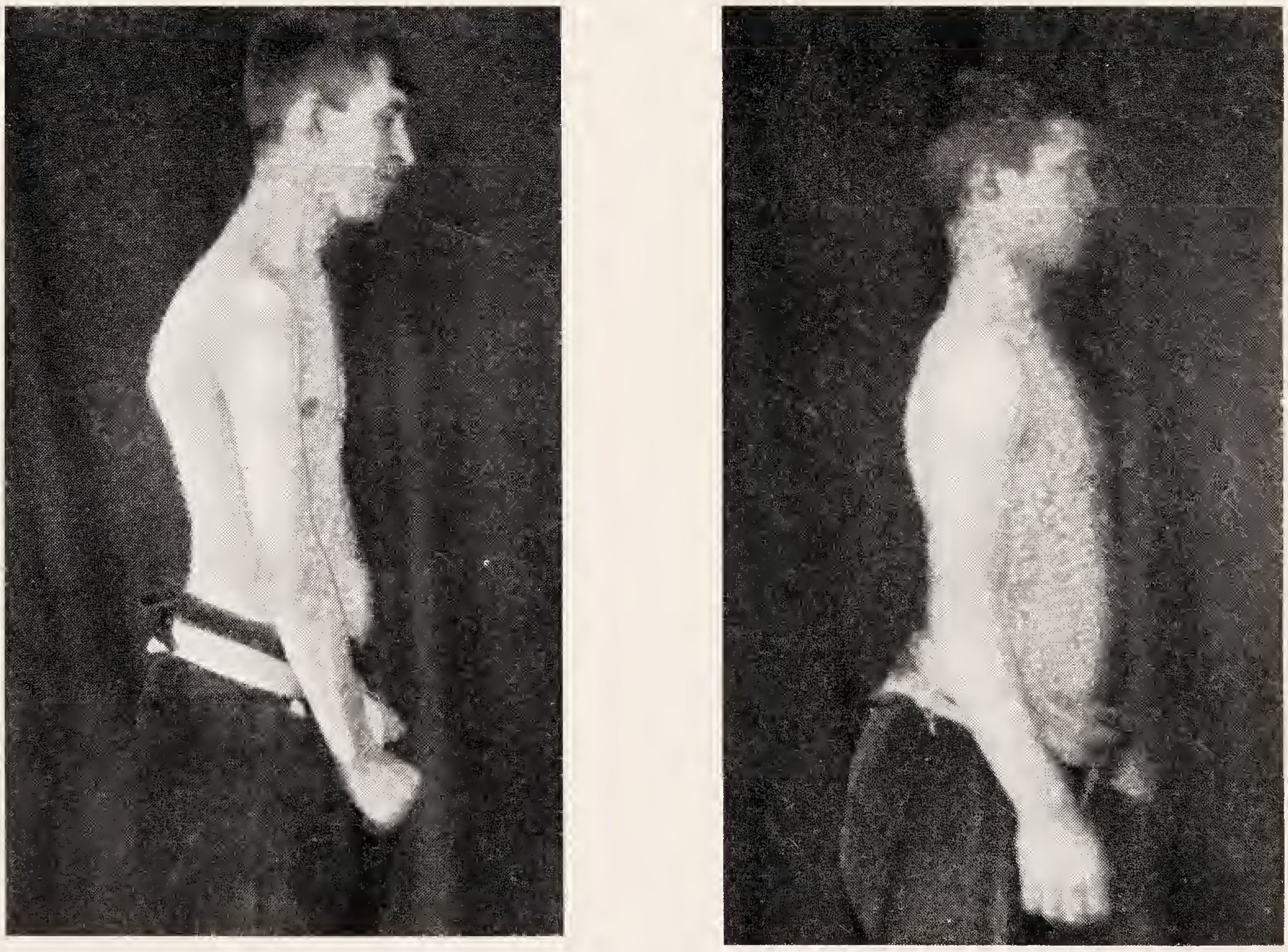
It has been shown above that certain organic diseases give rise to bad posture, peculiar gait, and in some cases to permanent deformity. On the other hand, postural defects of a functional character are often the source of chronic ill-health. Disorders of digestion and respiration are the most common causes of chronic illness, many of these illnesses are directly attributable to bad bodily mechanics. Let us consider what justification there is for this statement. It is well known that the diaphragm is a large muscle which separates the thorax from the abdomen and its function is to move up and down and so cause air to be exhaled and inhaled. This muscle is attached all round to spine, ribs and breast bone, but it is also suspended in the middle by a fibrous ligament to the cervical spine. Since the stomach and liver are attached to the lower surface of the diaphragm, the abdominal

PLATE II.



(a) Leptosome type.

(b) Normal type.



(a) Stooping attitude.

(b) Erect attitude.

organs may be regarded as being slung from the vertebræ in the neck, and to keep this sling taut and so maintain the viscera in position, the head must be held erect and the chin kept in. The effect of the sling being slack would be that the diaphragm would occupy a lower position, its excursions in respiration would be much less and consequently ventilation of the lungs diminished and all the viscera attached to the diaphragm would be depressed.

Anatomists recognise two extreme types of the human body apart from the average, viz. :—(1) Leptosomes (Thin bodied). (2) Pycnick (Thick bodied).

Possibly we can best understand the effect of the abdominal organs being depressed by considering the characteristics of the Leptosomes. (See Plate II. (*a*).) In this type, the whole figure is slight and more slender than normal. The skin is soft and delicate, the hair is abundant and the individual is usually tall. The increased length is chiefly in the thorax, the abdomen being relatively short. The sub-costal angle is narrow and the chest capacity and expansion are poor. Owing to the small thoracic outlet the liver is depressed and for the same reason the stomach occupies a low position. The lowest part of the stomach lies below the level of its outlet so it has to empty itself against gravity. On this account, together with poor circulation, the general nutrition of these people is below par. The effect of this depression of the viscera is to expose the solar plexus to pressure and irritation tending to intestinal stasis and other alimentary disturbances.

From these facts it may be seen that those persons who have a depressed diaphragm owing to stooping are comparable to the slender type who are particularly liable to suffer from many chronic disorders of digestion, and are especially liable to phthisis and various forms of neurasthenia.

Plate II. (*a*) represents a boy of this type, and for comparison a well developed boy, aged 16, is shown in (*b*). Compare (1) the difference of the sub-costal angle, which has been marked on the body with a flesh pencil. (2) The length of the thorax. (3) The flat chest, round shoulders and sagging abdomen.

Quite apart from any congenital defect or disease of the spine, round shoulders is one of the commonest postural defects found among growing children. It is much commoner in girls than in boys and mostly in children of a slender build. It is generally due to poor mechanics of the body as a whole. The child has been allowed constantly to sit in a drooped, relaxed attitude of the body. Instead of the muscles being made to hold the body erect with shoulders drawn back, a position of fatigue has been assumed in which reliance has been placed on the ligaments. In some cases it is due to the weight of the clothing being badly adjusted; the weight has been on the outer part of the shoulder. Shoulder straps and braces should cross upon the base of the neck and not upon the tip of the shoulder.

Another common postural defect is lateral curvature of the spine. It is most often seen in girls whose muscular tone and bodily mechanics are faulty, either from fatigue or want of exercise.

The habitual assumption of faulty attitudes at the school desk is partly to blame but not entirely so. Taken along with weak muscles and ligaments and imperfectly ossified bones, it is unquestionably a factor in its causation. If not corrected, what is a functional condition at first may pass into a true structural defect. To prevent this condition, in the first place, there should be throughout school life habitual training in poise and good bodily mechanics. To stand, sit and walk in the attitude of the highest potential of physical efficiency is what must be taught. In the second place, suitable desks must be provided and much more care should be given to ensure that the height of seat and desk are suitable for the individual child.

The School Desk.

From a hygienic point of view, no doubt the ideal thing is to have a separate desk and chair for each pupil, but where there are large classes in comparatively small space I think the dual desk with separate chairs is the most practical arrangement. After measuring many hundreds of children, I conclude that the desks in common use are defective in three respects :—

(1) The desk is too high for the seat.

(2) The angle of slope is too small to be of much value.

(3) The permanent slight slope renders the desk useless as a flat table.

It is obvious, therefore, that what is required is a desk of a suitable height for the individual child and so made that the sloped desk is easily converted into a flat table. There are, of course, many desks which are convertible but what is required is something that is extremely simple and inexpensive. The desk seen in Plate III. which has been made to my measurements, meets these requirements. It is made in oak, is quite light and can be easily moved. It has two lockers, rather shallow so as to allow plenty of knee space. By simply raising the desk at the back and with a slight movement backward, the flat table is converted into a desk at an angle of 20 degrees. A wooden skirting attached to the movable part prevents fingers being trapped and keeps the lockers closed. To prevent papers falling off, there is an easily adjustable ledge at the front of the desk.

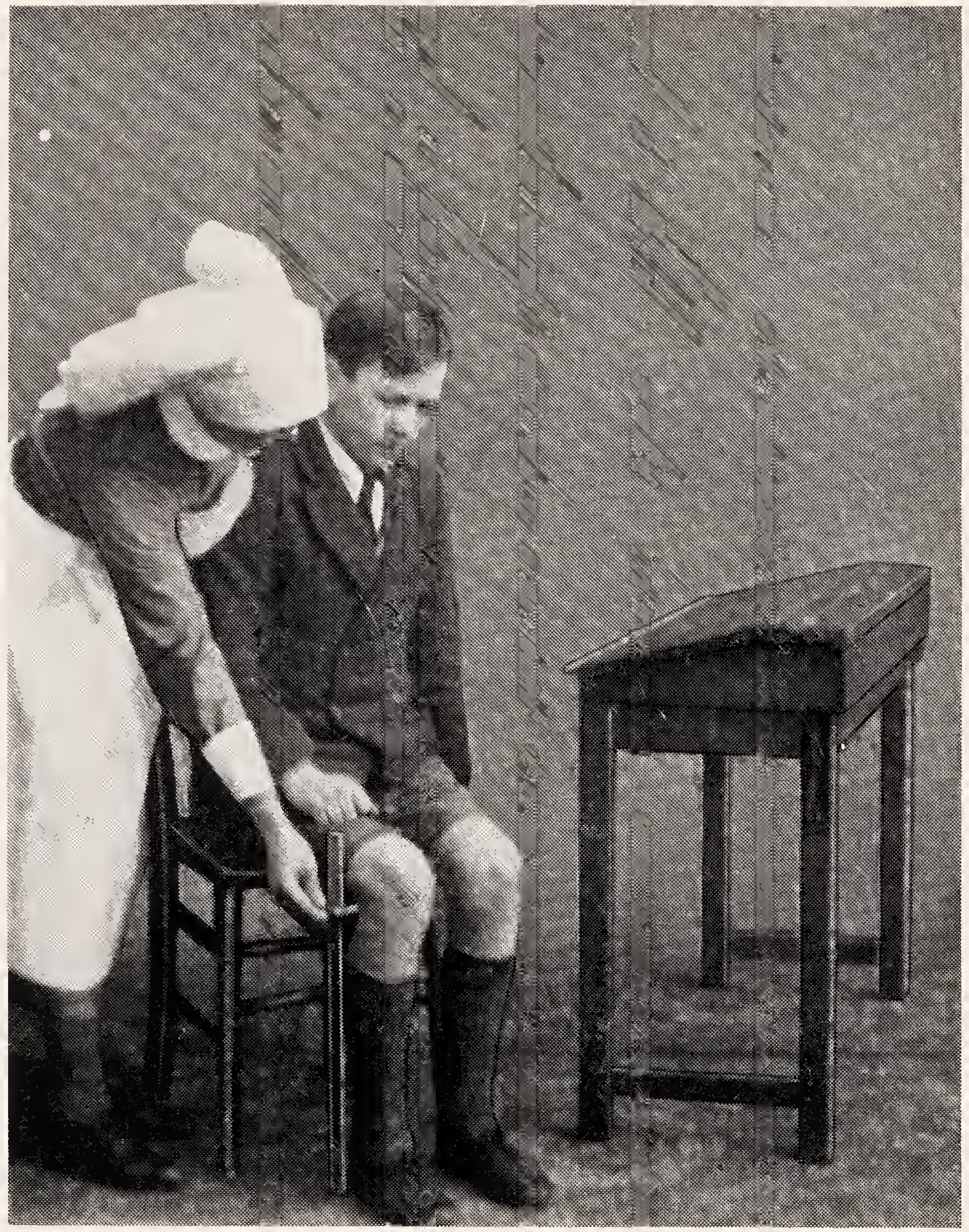
I have also had a simple measure made for measuring the child. It consists of a 20in. boxwood measure with a movable bar 4in. long. The two measurements required are :—

(1) With the leg of the child vertical and the thigh horizontal, measure the distance from the floor to the thigh immediately behind the knee. This measurement should give the correct height of the seat.

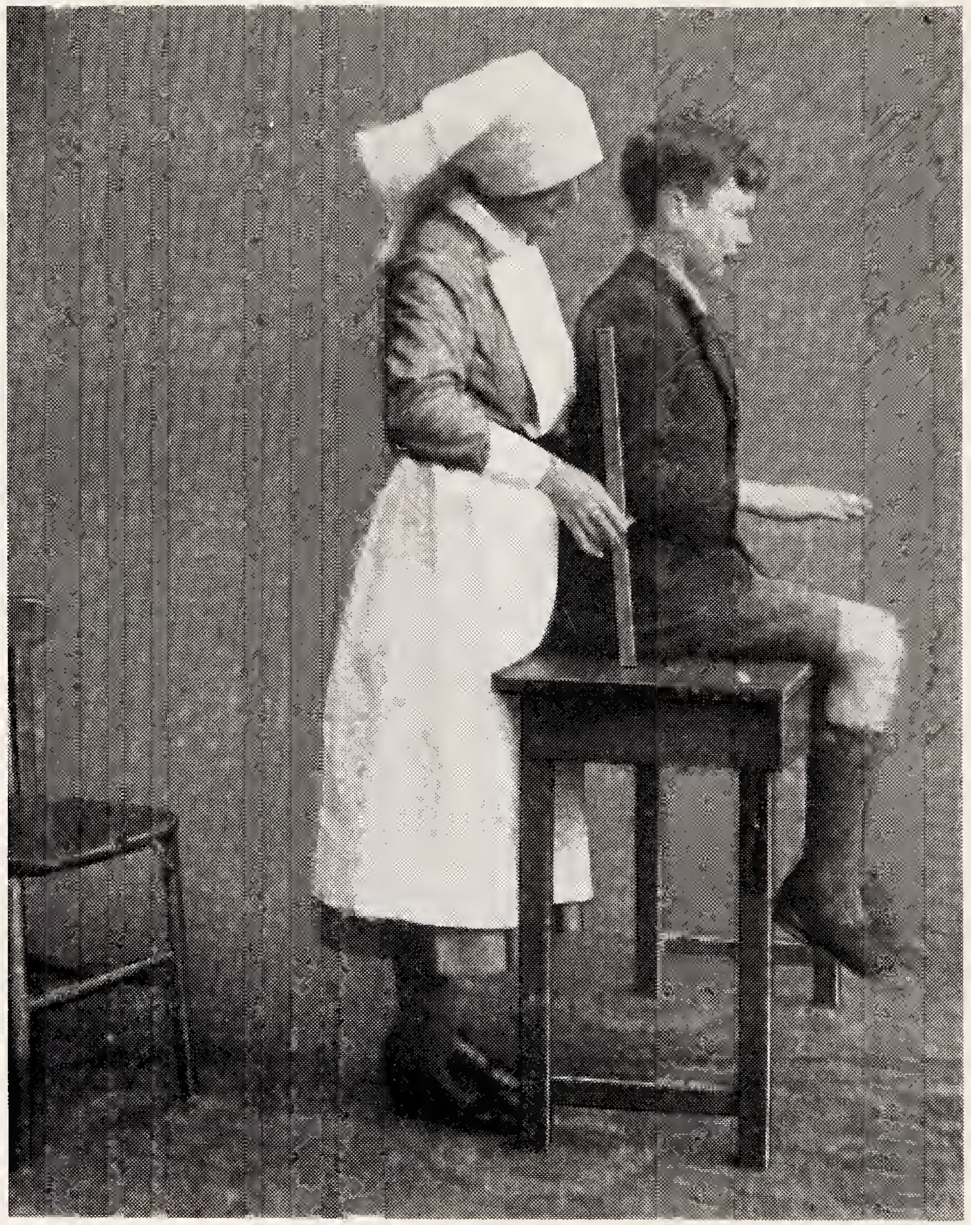
(2) With the elbow bent and close to the side, measure the distance from the seat to the elbow.

These two measurements added together plus half-an-inch give the height of the desk.

PLATE III.



(1) Measuring the length of the leg.



(2) Measuring the difference.

A nurse can be seen measuring a child for this purpose in Plate III., and the desk in question is shown both as a table and as a desk.

Summary.

It can therefore be shown that many conditions of ill-health owe their origin to faulty bodily mechanics and the doctor and teacher should be alive to the preventive effect of physical education. The aim should be to establish good habits in the child. If a person is taught how to correct his own body posture and aims at making good posture habitual, he has gained more than the benefits derived from many strenuous exercises with the body poorly poised.

It has been seen that all the bodily functions are based upon properly regulated and sufficient activity of the respiratory and circulatory organs. We usually breathe with only a part of our surface capacity; in rest, with only one-seventh of it. The upper part of the lungs, especially the apices, are idle and become inefficient through continuous idleness. Just as muscles atrophy through inactivity, so does the lung tissue under the same circumstances. One of the most common of all chronic diseases is tuberculosis of the lung. If suspected, the first place we look for it is at the apices of the lungs which we know are often undeveloped and have a poor blood supply, consequently they have little resistance to disease.

The child sitting at the school desk breathes insufficiently; the upper section of his lungs are poorly ventilated; this is especially true in the position usually assumed in writing. It is therefore of great importance that children should have breathing exercises throughout school life. The best of these are not formal indoor physical exercises, but games involving rapid running and jumping. Through no sort of voluntary breathing exercises can such an increase of the breathing capacity be attained as through the involuntary increase in breathing which takes place in speed and endurance exercises. Natural respiration, no doubt, is increased by gymnastic exercises, but they should be used as a substitute for out-door games when the latter are impossible.

It is important to bear in mind that rest as well as exercise for delicate children with flat chests is of value, especially for the slender type. Rest and supportive treatment are required for a period, until the muscles have regained their tone. Our aim is to give these children periods of rest in the recumbent position, out of doors, as at the Open-Air School. The exercises, at first, should be with the child lying upon the back on a flat surface, hands behind neck with elbows touching the flat surface. In this position take ten deep breaths with mouth closed. When the body has been gradually re-modelled and rested in this way and the pupil understands how to use his muscles and to breathe correctly, he is in a fit state to be instructed in how to stand and walk in the position of good posture.

In conclusion, to those who wish to see adults with well-balanced minds and bodies, free from incorrect posture with its train of attendant illnesses, I would say:—

To Parents.

(1) Minor degrees of Rickets, one of the causes of bad posture, is far more common than is generally realised. To prevent this disease, all mothers should nourish their children in the natural way for 8 or 9 months. Subsequently, the child should have an adequate amount of clean uncooked milk and should be kept in the open air as much as possible.

(2) During the first year, do not hasten the stages of sitting up, standing and walking.

(3) Watch your children walking, correct stooping, one-sidedness, and throwing the weight on the inner side of the foot.

(4) See that the weight of the clothing is properly placed. Have shoes made to fit the foot and do not try to make the foot fit the shoe.

To Teachers.

(1) Measure your pupils, and make sure that the desk and seat is of a suitable height for each child.

(2) Insist on children sitting upright with shoulders parallel to the desk. The thigh should be in the horizontal position, the legs vertical, the feet resting on the floor, the back supported by a back-rest across the loins.

(3) Never take physical exercises indoors if they can be taken in the playground. Encourage all forms of outdoor games and sports. For older girls, swimming is a particularly good exercise.

(4) The normal child, who at times sits in a stooping position at the desk, should be made to run round the playground two or three times.

(5) The delicate and slender child may require rest rather than exercise; any cases of this character should be referred to the doctor, who visits your school to give you advice.

APPENDIX B.

The End-Results of the Tonsil and Adenoid Operation in Children.*

By J. A. Keen, F.R.C.S.

The end-results of tonsil and adenoid operations may be investigated from many points of view, as the discussion arranged at the Centenary B.M.A. meeting clearly showed. As the operation is performed on nearly one-fourth of the population during the school period[1], the subject of end-results is one which will be equally interesting to throat specialists, general physicians and public health authorities.

How far the operation succeeds in relieving the *local* symptoms in the nose, throat and ears, and where it may fail, are questions which more particularly concern the laryngologist. My study of this subject is based on the average results obtained in children who were operated on at the Leicester School Clinic during the last 12 years, approximately 1,000 cases being treated each year.

The main symptoms for which we are consulted in children with unhealthy tonsils and adenoids are the following : nasal obstruction, frequent colds, sore throats and feverish attacks, swollen glands. Then, a group of symptoms connected with the ears, viz., earache, attacks of deafness and a discharge from the ears.

Nasal Obstruction.

Nasal obstruction in children of school age is due to hypertrophy of the adenoids in the great majority of cases. But it should be remembered that there are other causes of nasal obstruction and these must be taken into account if one wishes to avoid disappointing end-results. After puberty and as patients reach early adult life, adenoids become less and less important as a cause of nasal obstruction. In adults, of course, adenoids cease to be of any importance, and we have to think more of conditions in the anterior nares, such as septal irregularities, mucous polypi, sinus suppuration. Also, at the very beginning of life, in the infant, hypertrophy of the inferior turbinals is more often the cause of nasal obstruction than adenoids.

In children *septal deviations and spurs* are perhaps more often found than we imagine. In order to obtain a rough idea of the frequency of the various conditions which I shall mention, I have looked through 2,000 record cards of tonsillectomy cases at the Leicester School Clinic taken quite at random in an alphabetic index of all the cases which passed through my hands in the last twelve years. As regards septal deformities, I noted their presence in 39 cases, nearly 2 per cent. In these 39 I had advised a simple tonsil and adenoid operation in 31 cases, no operation in six cases, and a submucous resection in only two. If we have a case in which the septum is much deformed and is obviously responsible for the nasal obstruction, and there is only a small amount of adenoid tissue, it is better not to operate at all unless a submucous resection is done at the same time. Because simple removal of a small amount of adenoid tissue will not relieve the nasal obstruction.

---

* Based on a paper read at the Centenary Meeting of the British Medical Association in London, 1932.

The same argument applies to children with well-marked *high-arched palate.* Recent research has shown that the high-arched palate is not the result of neglected adenoids, but that other factors come into play[2]. In such cases one should not remove small amounts of adenoids; the end-results will be disappointing, as the children remain mouth breathers.

Adenoid enlargement may be accompanied by *chronic hypertrophy of the inferior turbinals*, 36 cases among 2,000. In 22 of these cases I performed a partial resection of the inferior turbinate bones as well as tonsillectomy. In 14 cases only the tonsil and adenoid operation. Whenever possible, I prefer to leave the turbinals alone at first, because many cases of *hypertrophic rhinitis* subside spontaneously after simple tonsil and adenoid operation. If the nasal obstruction is not relieved after three to four months, then a further operation may be done, either turbinotomy or cauterizing.

If *chronic sinus suppuration* is suspected in a child and the tonsils and adenoids are definitely unhealthy, again the simpler operation must be done first with good prospect of curing the symptoms and of avoiding a severer operation.

A small residue of cases remains where we *fail to relieve* the nasal obstruction by operation. These children are brought back to the Clinic twelve months or so later, because a *chronic nasal catarrh* has persisted. I counted nine such cases among the 2,000. We cannot always blame ourselves for these poor end-results. In some of the cases the persistent nasal catarrh will ultimately be found to be due to chronic sinus suppuration and the removal of septic tonsils and adenoids was certainly indicated as a first step. A few cases will belong to the allergic group of diseases and in others there is a constitutional factor, probably a tendency to tuberculosis, which is the cause of the persistent rhinitis.

In considering the end-results we ought to think of our patients' state of health six to twelve months, or even a longer period, after the operation. Many children in whom the end-result had seemed disappointing at first, show the full benefit later on. It has been said that the period after operation which has to elapse before the full benefit is felt, is nearly as long as the period during which the harmful symptoms have been developing.

Cervical Adenitis.

The next important symptom to be considered is *swollen glands.* Chronic infection of the tonsils frequently causes enlargement of the glands at the angle of the jaw. These glands are palpable in roughly 25 per cent. of the schoolchildren who are referred to the aurist. In the majority of cases the swelling is *bilateral* and it is due to a simple non-tuberculous infection of the tonsillar group of cervical lymphatic glands. In some cases the glands only become palpable during an attack of tonsillitis and subside completely in the interval. In others the glands remain permanently palpable and only begin to disappear some months after tonsillectomy. These cases all do very well. When the glands are palpable in the posterior triangle behind the sternomastoid one generally associates this sign with hypertrophy of the adenoids and sepsis in the nasopharynx. The end-results are equally good in this group.

In a third group of cases we find comparatively large, well-defined masses of glands, often on *one side* only. Many of these swellings are tuberculous glands and the prognosis should be guarded. Surgeons are in the habit of referring such cases to the laryngologist for tonsillectomy in the first instance. If there is a definite history of the gland getting larger with attacks of sore throat and then subsiding again, one can expect a good result. But many of these glands ultimately soften and break down in spite of tonsillectomy. I remember a recent case, a boy aged twelve, whom I watched for a year after operation, during which time he was perfectly fit and well. For the first nine months after tonsillectomy the gland seemed to harden and shrink. Then he had a bad cold and the gland began to enlarge and soften. But even in such a case, I think, tonsillectomy as a preliminary operation was the correct procedure. External operations for glands in the neck have become far fewer in the last 20 years. This every surgeon admits. A good case can be made out for the argument that this diminution in the number of operations for cervical glands is in some way connected with the greater number of tonsil and adenoid operations. But we must also take into account that there has been a general reduction of non-pulmonary tuberculosis during the same period.

Ear Symptoms.

Earache and intermittent attacks of deafness, noticed especially with "colds," is an important symptom-group associated with unhealthy tonsils and adenoids. We attribute these symptoms to the presence of a mass of adenoids sufficiently large at times to press on the pharyngeal ends of the Eustachian tubes or to collections of lymphoid tissue in this region, especially in Rosenmüller's fossa. Sometimes there is no complaint of deafness, for instance if only one side is affected, but on inspection we see a retracted drum membrane. This group we may call *Eustachian obstruction and intermittent non-suppurative otitis*. Nearly 40 per cent. of all the tonsil and adenoid cases in my series showed these symptoms, to be exact, 781 among the 2,000. We have every reason to be satisfied with our end-results in this form of deafness. Some years ago I obtained striking proof for this. I was allowed to go through the schools, in order to discover how many seriously deaf children there were in the ordinary classes. The teachers were asked to pick out all the children whom they considered were deaf. Many of the children who were brought to be tested had recently undergone tonsillectomy and the great majority of these had completely recovered their hearing. If a child continues to be deaf after removal of tonsils and adenoids, the case most likely belongs to another category and must be classified as chronic middle-ear catarrh in which the tympanic structures are already permanently interfered with, or as otosclerosis or certain rare forms of nerve-deafness. Among the 2,000 records of tonsillectomy which I examined there were eight cases in which some deafness had persisted, unfortunately, quite a definite percentage.

When the deafness is established and has lost its *intermittent character,* we must be very careful not to promise complete recovery of hearing after tonsillectomy, e.g., if we go into the history of the deaf children in our special schools, we are often told that the tonsils and adenoids have been removed with no result, and these disappointments are not to the credit of the operation. When I see a child with *marked deafness* (say ordinary voice five to six feet, with the back turned), I re-test after a few weeks. If there is no difference in the hearing then, I do not advise operation, unless this is strongly indicated on grounds other than deafness.

Approximately 12 per cent. of my tonsil-adenoid cases (250 in 2,000) had a history of discharging ears, and as a rule the ear discharge is intermittent. The end-results from the tonsil and adenoid operation in the intermittent type of *suppurative otitis* are good, although recurrences are not eliminated altogether. For instance, among the 2,000 cases there were 25 (one-tenth of all those with discharging ears) where further attacks of middle-ear suppuration occurred in spite of the effective removal of septic tonsils and adenoids, but these recurrent attacks of otitis were slight, as a rule, and easily remedied. A discharging ear can often be made to heal by suitable treatment, even when the child obviously requires tonsillectomy. During the two to three weeks that the patient may have to wait for operation the ear becomes dry, showing that the pathological connection is not a very close one.

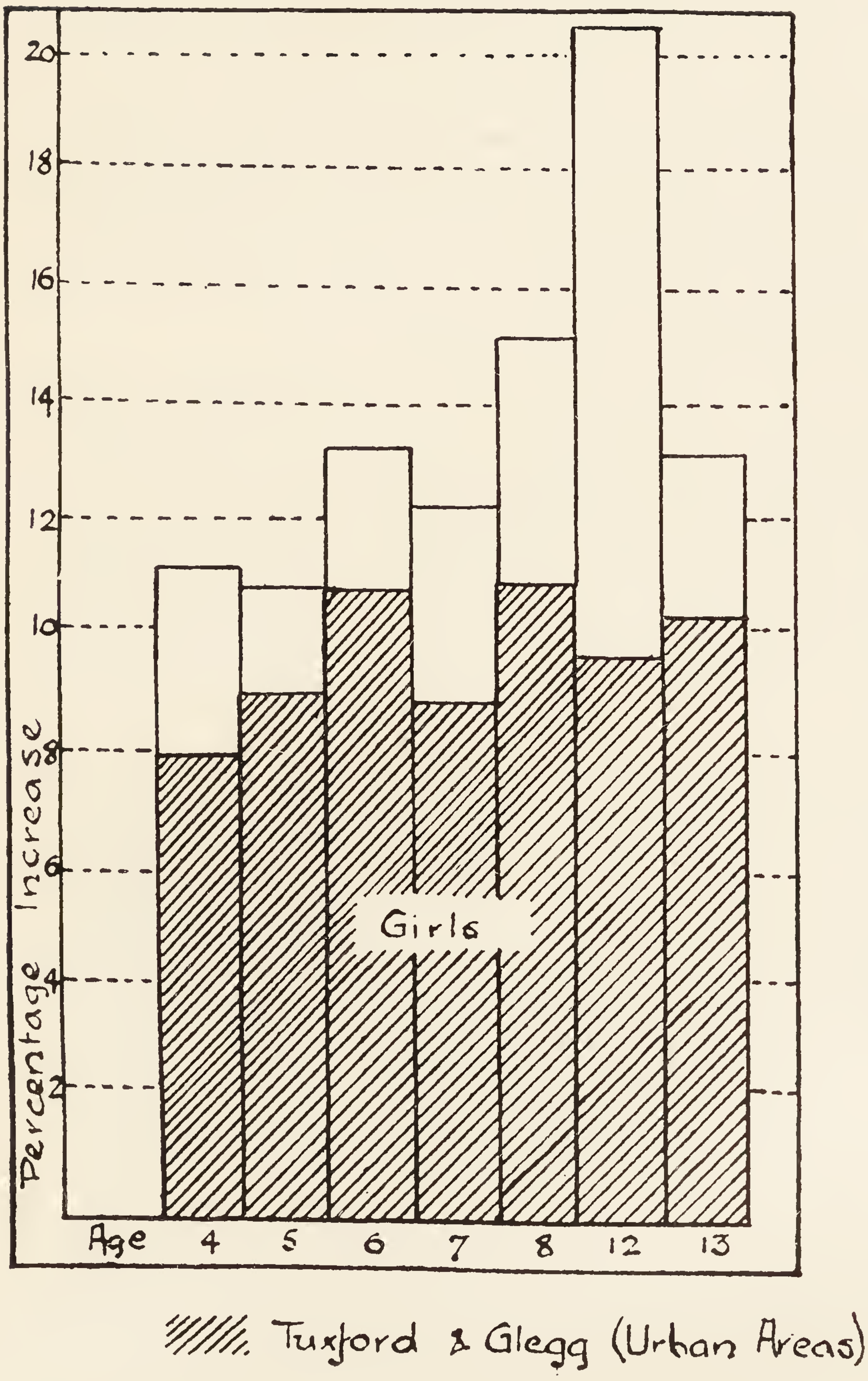
In my opinion, a discharging ear by itself is not an indication for removal of tonsils and adenoids. In the hurry of a busy out-patient department it used to be almost a rule that tonsil and adenoid operation was necessary when a child had a discharging ear. This is wrong, I think, and local treatment to the ear should always be tried first. Not simply peroxide drops, but powder insufflations, ionization, etc.[3]

When we come to the *chronic type* of middle-ear suppuration I find that the influence of the greater number of tonsil and adenoid operations is an indirect one. When a child has recurring granulations in the meatus and cholesteatoma, tonsillectomy has practically no effect on the clinical course of the ear condition. But I find that these obstinate cases are getting fewer and fewer every year among the elementary school children, in Leicester at any rate. During 1922, e.g., I performed 40 radical mastoid operations; by 1930, eight years later, the number had fallen to seven. The larger number of tonsillectomies has certainly something to do with this, and it is another instance of the lesser operation removing the necessity for a severe one. The explanation is that the attacks of middle-ear suppuration tend to be slighter and to heal more readily in children whose nose and throat passages have been made healthy. Therefore the numbers of those cases which ultimately drift into a chronic condition become fewer.

General Health.

Medical men are agreed that in suitable cases the *general health* improves enormously as a direct result of the operation. Some time ago I arranged that all the children undergoing tonsillectomy during one year had weight, height and chest measurements made just before the operation and again exactly a year later. There were 600 children, altogether, on whom these measurements were made. Later, the cases were divided into boys and girls and into the different age-groups, and the *average* measurements before and after operation were calculated for each group. The *percentage increase* of the various measurements was compared with the normal increase in each age-group, as laid down by the Tuxford and Glegg standard.

The results were tabulated and suitable diagrams were made, showing the percentage increase of the various measurements in a graphic form. These tables and charts appeared in full in Appendix B of Dr. Allan Warner's Report for 1923. One of the weight charts may be reproduced here.



The shaded areas represent the percentage increase in weight during one year in each age-group as laid down by the Tuxford and Glegg standard. The light areas over and above the shaded ones represent the percentage increase in the weight of those children who had undergone tonsillectomy at the beginning of the year. In practically all the age-groups there was a striking *additional* increase in weight and height which resulted after the Tonsil and Adenoid operation. For instance, in the 12-year age-group among the girls the percentage increase in weight was more than double the normal one (see illustration).

Increasing Numbers of Tonsil and Adenoid Operations Among School Children.

The increasing number of tonsillectomies among school children are frequently commented upon and adversely criticised by many writers.[4] [5] As regards our own figures (Leicester City), there is no evidence of a steady increase in the operation numbers, which is such a marked feature in other areas. The probable explanation is that the present School Clinic arrangements in Leicester have existed since 1921. In other areas suitable arrangements, allowing for the admission of these children for at least one night, may only have been in working order for shorter periods.

Writers who condemn high operation-rates for tonsillectomy among children, generally make a clinical comparison between children who have had the operation and those who have not. I have previously criticised this method of comparison, which leads to absolutely faulty conclusions[6]. In the article which I reviewed[4], the author had examined 424 girls as they were admitted to a boarding school, the ages ranging from 12 to 16 years. Of this number, 182, or 42 per cent., had had the tonsil-adenoid operation before he saw them; 242 had not had the operation. This gave him two groups which we may call I. (operation group) and II. (no operation). These two groups are contrasted from the point of view of certain defects (bad teeth, postural defects of the spine, defective vision, otorrhœa, flat feet, "rheumatism," heart defects, bone deformity). All these defects are more evident in Group I., but this can hardly be otherwise, because the girls who had to undergo operation in previous years, as a group, must be composed of less healthy individuals than Group II.

In my experience, before parents consent to an operation on the nose and throat, there has generally been a good deal of ill-health, e.g., attacks of tonsillitis, rheumatic fever and chorea. Many of these children have suffered from a "catarrhal diathesis" since infancy, i.e., they breathe badly, they have constant colds, bronchitis, deafness, discharging ears, etc. The operation is often delayed too long, and one cannot expect to remedy defects which are already firmly established, such as marked deafness, or damage to the heart valves.

The author, Dr. Paton, to some extent anticipates this criticism by saying that in Group II. there are some girls with large tonsils (17.4%) who have not had operations. In his opinion, these cases would counterbalance those in Group I. who had "unnecessary" operations. Therefore, he thinks it is fair to compare the two groups as he has done. But the cases in Group II. with large tonsils are very likely examples of tonsil hypertrophy unassociated with septic infection and not complicated by adenoids; these do not need operation. The author believes that he has proved that an operation-rate of 42 per cent. is too high. That may be true, but the contention cannot be supported by this particular method of investigation.

The same criticism applies to most of the statistical material brought forward by Drs. Glover and Wilson in a more recent article[5], and by the numerous writers whom they quote.

Conclusions drawn from statistics which are based on a comparison between children who have undergone operation and others who have not, should always be accepted with the greatest reserve. I must repeat that the majority of such statistics are vitiated by the fact that the tonsillectomised group will contain all the children who suffer chronic ill-health and who have a poor resistance to infections of all kinds; while the control-group (non-tonsillectomised) will contain all the healthy children. The only satisfactory control-group would be children with obviously unhealthy tonsils and adenoids where one had deliberately refrained from operating, and these should be compared with a group of tonsillectomised children in whom the operation had been efficiently performed. For obvious reasons such a piece of research covering a sufficient number of cases will never be carried out.

In his Annual Report for 1931[7], Sir George Newman analyses the considerations bearing upon the increase of operations. One of the main causes is undoubtedly *improved facilities,* particularly the provision for in-patient treatment of the children before and after operation. I do not think that *"excessive operating"* is a cause. It is more probable that we still err on the conservative side and that the yearly figure for tonsil and adenoid operations will continue to rise in many areas.

In the Summary of Chapter IV. on Adenoids and enlarged Tonsils (page 63), Sir George says that " the immense and rapidly increasing annual number of operations cannot fail to convey the impression that far too many operations are now being performed" . . . . The public naturally take a great interest in the tonsil-adenoid operation. It is unfortunate that such statements, taken out of their context, should so readily find their way into the Press, thus making the work of physicians and specialists needlessly difficult.

One might just as reasonably argue—and with far more justification—that the rapidly-increasing number of tonsil and adenoid operations cannot fail to convey the impression that far too few of these operations were being done in the past, and that the medical profession and the lay public are only beginning to realise the immense benefit to health which results from tonsillectomy and removal of adenoids in children.

REFERENCES.

[1] J. Kerr Love, "Results of the so-called Tonsils and Adenoids operation."—Lancet, 1932, I, 1356.

[2] Keith, Sir A., and Campion, G. G., "A contribution to the mechanism of growth of the human face."—Proc. Brit. Soc. Orthodont, 1921, p. 89.

[3] J. A. Keen, "The treatment of otorrhœa: with a comparison of the various methods."—The Practitioner, July, 1928.

[4] J. H. P. Paton, "The tonsil-adenoid operation and some of its results."—Quarterly Journal of Medicine, October, 1928.

[5] J. A. Glover and J. Wilson, "The end-results of the tonsil and adenoid operation in childhood and adolescence."—Brit. Med. Journ., 1932, II, 506.

[6] J. A. Keen, "Non-operative treatment of diseased tonsils and adenoids."—The Medical Officer, 2nd May, 1931.

[7] *The Health of the School Child*: Annual Report of the Chief Medical Officer of the Board of Education for the year 1931. Chapter IV: Adenoids and enlarged Tonsils, pp. 50-64.